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101-03473/

Canadian Technical Report of
Fisheries and Aquatic Sciences 2349

March 2001

# Phytoplankton Monitoring in the Western Isles Region of the Bay of Fundy during 1997-98

by

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This is the two hundred and forty-third Technical Report of
the Biological Station, St. Andrews, NB

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Cat. No. Fs 97-6/2349E ISSN 0706-6457

Correct citation for this publication:

Martin, J. L., M. M. LeGresley, and P. M. Strain. 2001. Phytoplankton monitoring in the Western Isles region of the Bay of Fundy during 1997-98. Can. Tech. Rep. Fish. Aquat. Sci. 2349: iv + 85 p.

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## ABSTRACT

Martin, J. L., M. M. LeGresley, and P. M. Strain. Phytoplankton monitoring in the Western Isles region of the Bay of Fundy during 1997-98. Can. Tech. Rep. Fish. Aquat. Sci. 2349: iv + 85 p.

A monitoring program was initiated in May 1987 to study phytoplankton populations in the Western Isles region of the Bay of Fundy, southwest New Brunswick. This report provides another 2 yr of data to add to the results from 1987-96 published previously. Samples were collected for phytoplankton distribution and abundance as well as plant nutrients (ammonia, nitrate, phosphate and silicate) at four locations – Brandy Cove, Lime Kiln Bay, Deadmans Harbour and the Wolves Islands. Additional parameters measured included secchi depth, and depth profiles for fluorescence, temperature and salinity. Samples were collected at the surface from all locations and additional discrete depths of 10 m, 25 m, and 50 m were sampled at the Wolves.

Dominant species (>$10^3$ cells $L^{-1}$) during the 2-yr period were *Guinardia delicatula*, *Leptocylindrus danicus*, *Leptocylindrus minimus*, *Mesodinium rubrum*, *Pseudo-nitzschia delicatissima* group, and *Skeletonema costatum*. *M. rubrum* and the *P. delicatissima* group have been observed at concentrations >10,000 during all of the past 12 yr. Whereas *Alexandrium fundyense* (the organism responsible for producing paralytic shellfish toxins) concentrations exceeded $10^3$ cells $L^{-1}$ during the 4 yr 1993-96, during 1997-98, highest concentrations observed were 8.2 x $10^3$ cells $L^{-1}$ and 6.7 x $10^3$ cells $L^{-1}$, respectively.

During 1998, another sampling site in mid Passamaquoddy Bay was added as a result of concentrations of *M. rubrum* exceeding one million cells $L^{-1}$ during a 4-wk period in the northern Passamaquoddy Bay area, which was responsible for low numbers of salmon mortalities.

Highest and lowest temperatures (0.4–15.5°C) were measured at Brandy Cove as well as lowest salinities (23.85). Silicate values ranged from 0.44 to 14.6 µM; phosphate levels ranged from 0.34 to 1.13 µM; nitrate values were from 0.03 to 9.87 µM; and ammonia ranged between 1.18 to 6.72 µM.



## RÉSUMÉ

Martin, J. L., M. M. LeGresley, and P. M. Strain. Phytoplankton monitoring in the Western Isles region of the Bay of Fundy during 1997-98. Can. Tech. Rep. Fish. Aquat. Sci. 2349: iv + 85 p.

Un programme de surveillance a été lancé en mai 1987 pour étudier les populations phytoplanctoniques de la région Ouest de la Baie de Fundy, au sud-ouest du Nouveau- Brunswick. Ce rapport ajoute 2 années de données aux résultats déjà publiés des années 1987-96. Les échantillons d'eau pour l'analyse de phytoplancton et de nutriments (silicates, phosphates, nitrates et ammoniac) ont été prélevés à quatre emplacements (Brandy Cove, Lime Kiln, Deadmans Harbour ainsi qu'en proximité des îles Wolves). Le phytoplancton a été identifié et dénombré et les autres paramètres tels que la profondeur du secchi, le profil de la température, la fluorescence et de la salinité en profondeur ont été mesurés aussi. Aux quatre emplacements, les échantillons ont été prélevés à la surface et en plus nous avons aussi échantillonné trois profondeurs (10 m, 25 m et 50 m) aux Wolves.

Les espèces principales (<$10^3$ cellules $L^{-1}$) pendant ces deux années étaient *Guinardia delicatula*, *Leptocylindrus danicus*, *Leptocylindrus minimus*, *Mesodinium rubrum*, le complexe *Pseudo-nitzschia delicatissima*, et *Skeletonema costatum*. *M. rubrum* et le complexe *P. delicatissima* ont été observés pendant les 12 dernières années en concentrations >10,000. Tandis que le *Alexandrium fundyense*, l'organisme responsable de l'intoxication paralysante par les mollusques (IPM) atteignait un niveau élevé (au-delà de 10,000 cellules $L^{-1}$) dans chacune des quatre années 1993-1996, pendant les années 1997-98, leurs concentrations maximales étaient de 8.2 x $10^3$ cellules $L^{-1}$ et de 6.7 x $10^3$ cellules $L^{-1}$ respectivement.

Durant l'été de 1998, un autre emplacement a été ajouté au centre de la Baie de Passamaquoddy en raison des concentrations de *M. rubrum* qui ont atteint plus d'un million de cellules $L^{-1}$ pendant 4 semaines dans le secteur nord de la Baie de Passamaquoddy et qui ont causé des faibles mortalités de saumons.

Les températures minimales et maximales (0.4-15.5°C) ont été observées à Brandy Cove ainsi que les salinités minimales (23.85). La teneur en silicates variait de 0.44 et 14.6 µM; la teneur en phosphate de 0.34 à 1.13 µM; les nitrates de 0.03 à 9.87 µM; et l'ammoniac de 1.18 et 6.72 µM.

## INTRODUCTION

A phytoplankton monitoring program was initiated in the Western Isles region of the Bay of Fundy in 1987. Initially, the study was partially funded by the salmonid aquaculture industry due to growing concerns worldwide that the incidents of fish mortalities, especially those held captive in net pens, were increasing (Anderson 1989; Smayda 1990). The purposes of the study were: to establish baseline data on phytoplankton populations since little detailed work had been published since the earlier studies by Gran and Braarud (1935); to identify harmful algal species that could potentially cause harm to the aquaculture industry; to provide an early warning to the industry by sorting and identifying samples soon after collection; and to determine patterns and trends in phytoplankton populations. In addition, it could provide an early warning to regulatory agencies such as the Canadian Food Inspection Agency (CFIA) for the occurrence of species that produce toxins resulting in shellfish toxicities and closures of shellfish beds to harvesting, generally during the summer.

Harmful algal blooms have been known to affect fish through either of the following: toxins, clogging of gills or asphyxiation. Farmed fish are particularly vulnerable to harmful phytoplankton blooms because they cannot avoid blooms by swimming away and heavy mortality could occur within hours. Today the salmonid mariculture industry in southwest New Brunswick consists of more than 80 active farms (Fig. 1). In addition, a number of applications for new sites in the spring of 2001 have been submitted. Another purpose of the study is to determine whether there are environmental changes as a result of the salmon industry. Therefore, this report includes records of ecological observations for the 2-yr period beginning January 1997 until December 1998.

Although the majority of phytoplankton species occur in the environment without causing adverse effects, there are a few that are known to cause harm. For example, in the Bay of Fundy, *Alexandrium fundyense* and *Pseudo-nitzschia pseudodelicatissima* are species responsible for producing toxins associated with the syndromes paralytic shellfish poisoning (PSP) and amnesic shellfish poisoning (ASP or domoic acid poisoning). In these cases, shellfish that had been feeding on harmful species accumulate toxins with no obvious effects to the shellfish themselves. The toxins are then stored in their tissues and when the shellfish are eaten by vertebrate consumers, including humans, illness and, in some cases death, has resulted. PSP toxins and resulting shellfish toxicity have been around in the Bay of Fundy for hundreds of years (Prakash et al. 1971) and both our studies and PSP shellfish toxicity results show that *A. fundyense* occurs annually (Martin and White 1988; Martin et al. 1999).

Domoic acid was first detected in shellfish in the Bay of Fundy in 1988 and the causative species was determined to be *P. pseudodelicatissima* (Martin et al. 1990; Haya et al. 1991). During this event, the shellfish harvesting areas affected were located in Passamaquoddy Bay. It was not until 1995 that shellfish beds were closed again in the Bay of Fundy as a result of unacceptable levels of domoic acid and, in this case, the areas affected were outside Passamaquoddy Bay (Martin et al. 1998).

*A. fundyense* has not only been responsible for human illnesses as a result of PSP, but it has also affected fisheries. For example, in 1976 and 1979, hundreds of tonnes of Atlantic herring, *Clupea harengus harengus*, died from PSP toxins that the herring accumulated through the food chain (White 1980). In 1987, 14 humpback whales died after feeding on mackerel (*Scomber scombrus*) that had eaten zooplankton that in turn had fed on *A. fundyense* (MacKenzie 1988; Haya et al. 1990).

Results from the earlier years on the monitoring program have been published previously (Wildish et al. 1988, 1990; Martin et al. 1995, 1999). This report presents results from analyses of phytoplankton, plant nutrients, temperature and salinity during the 2 yr, 1997 and 1998.

## MATERIALS AND METHODS

The number of sampling sites in the southwest New Brunswick area of the Bay of Fundy has changed since the program started in 1987. Initially, 12 sites were sampled with 10 located in the Letang area, where the majority of the aquaculture sites were located at that time, and the remaining two located in Harbour de Lute (Campobello Island), in close proximity to another aquaculture site. The following year, the number of sampling sites expanded to 18, with additional sites in Passamaquoddy Bay around Deer Island, Deadmans Harbour and the offshore site at the Wolves. In 1992, sampling was reduced, due to financial constraints, to the four stations that continue to be monitored today (Fig. 2). These include: Brandy Cove (#17 – a brackish site influenced by the Saint Croix River

estuary), Lime Kiln Bay (#3 – Letang estuary where a number of aquaculture sites are located), Deadmans Harbour (#15 – an open bay with offshore influence), and the Wolves Islands (#16 – an offshore indicator site).

Sampling was conducted during the 2 yr, 1997 and 1998, aboard the research vessel, PANDALUS III. Weekly samples were collected from May 13 to the end of September in 1997 and from May 12 to the end of October in 1998. Biweekly sampling was conducted in the month of October 1997 and monthly during all other months in 1997 and 1998. Extra samples were collected in 1998 from sites in northern and mid-Passamaquoddy Bay during the time when brick-red patches of water were observed.

Either a Seabird Model 19 or Model 25 was used to collect vertical profiles of temperature, salinity and fluorescence at each site. Salinity results are reported on the Practical Salinity Scale (1980).

Phytoplankton and nutrient samples were collected at the surface by bucket from all four stations and at depths of 10 m, 25 m, and 50 m with a Niskin bottle at station #16. During the summer months a vertical plankton haul was made with a 20-µm mesh net, 0.3 m in diameter. A subsample was preserved with formalin:acetic acid (1:1 by volume) for further identification and SEM. In addition, a live sample was taken for further identification and culture of selected organisms. Live phytoplankton samples were immediately iced for the return trip to the laboratory.

Samples for ammonia, nitrate (nitrite and nitrate), phosphate and silicate were frozen immediately and later measured using a Technicon Autoanalyzer II as described by Strain and Clement (1996).

Samples and data were recorded according to date, location and depth; as well, an independent identification number was assigned at the time of collection. Information was entered, maintained and accessed in a database. Individual net haul results and individual depth profiles from the Seabird profiler were stored separately.

Water samples (250 mL) were immediately preserved with 5 mL formalin:acetic acid. Later, 50-mL subsamples were settled in Zeiss counting chambers for 16 h. All phytoplankton greater than 5 µm were identified and enumerated (as cells $L^{-1}$) using a Nikon inverted microscope. Further identification was done using either a JEOL JSM-5600 scanning electron microscope (SEM) or a Hitachi S-2400 SEM. Sample preparation for SEM was as follows: samples were rinsed with 250 mL distilled water (prefiltered 1.3 µm) onto a 3-µm (Poretics) polycarbonate filter using a 25-mm Millipore vacuum filtration apparatus. Diatoms were cleaned with the permanganate oxidation method (Hasle and Fryxell 1970) while samples with thin walls and/or unarmoured dinoflagellates were dehydrated in a series of ethanol solutions (20, 50, 70, 85, 95%) prepared with distilled water and absolute ethanol for a minimum of 10 min at each step, finishing with three rinses of 100% ethanol. For the final drying step, three changes of hexamethyldisilazane (HMDS) were used (Bray et al. 1993; Kaczmarska et al. 2000), a minimum of 10 min each, allowing the last rinse to evaporate slowly at room temperature. Filters were mounted on stubs, then coated with gold-palladium in a Hummer sputtering system.

For species identification purposes, the *P. delicatissima* group included species of both *P. pseudodelicatissima* and *P. delicatissima*; the *P. seriata* group included the species *P. multiseries, P. pungens* and *P. seriata. Alexandrium fundyense* cells included all its life cycle stages, and if different stages in its life cycle were observed, they were recorded separately as well. Its life cycle stages include: duplets or triplets (asexually dividing cells) that are observed early in the bloom, fusing (sexual division where two cells fuse together), planozygote (large cell formed from the fusing cells) and cysts or resting spores.

## RESULTS

There were a total of 24 and 29 sample days in 1997 and 1998, respectively. Numbers of samples analyzed were higher during 1998 (195) than during 1997 (164) due to the persistence of the fall diatom bloom and the extension of weekly sampling.

### PHYTOPLANKTON

Numbers of samples analyzed for phytoplankton density were 164 in 1997 and 195 in 1998. During the 2 yr, 150 species of phytoplankton and smaller zooplankton were identified (Appendix 1). Identification and enumeration results for phytoplankton are listed in Appendix 2. Organisms that were observed at concentrations greater than 10,000 cells $L^{-1}$ during the 2 yr are listed in Table 1 in alphabetical order. Dominant species during the 2 yr were: *Chaetoceros compressus, Guinardia*

Table 1. Organisms detected at levels greater than 10,000 cells $L^{-1}$.

| 1997 |
|---|
| *Asterionellopsis glacialis* |
| *Chaetoceros compressus* |
| *Cylindrotheca closterium* |
| *Ditylum brightwellii* |
| *Guinardia delicatula* * |
| *Heterocapsa triquetra* |
| *Leptocylindrus danicus* |
| *Leptocylindrus minimus* * |
| *Mesodinium rubrum* |
| *Pseudo-nitzschia delicatissima* group * |
| *Skeletonema costatum* * |
| *Thalassiosira decipiens* |
| *Thalassiosira nordenskioeldii* |
| **1998** |
| *Cerataulina pelagica* |
| *Chaetoceros compressus* |
| *Chaetoceros debilis* |
| *Chaetoceros socialis* |
| *Guinardia delicatula* * |
| *Guinardia flaccida* * |
| *Lauderia annulata* |
| *Leptocylindrus danicus* |
| *Leptocylindrus minimus* |
| *Mesodinium rubrum* |
| *Pseudo-nitzschia delicatissima* group |
| *Scrippsiella trochoidea* |
| *Skeletonema costatum* * |

* levels greater than 100,000 cells $L^{-1}$

*delicatula*, *Leptocylindrus danicus*, *L. minimus*, *Mesodinium rubrum*, *P. delicatissima* group, and *Skeletonema costatum*. Species with concentrations greater that 100,000 cells $L^{-1}$ in 1997 were: *G. delicatula* ($1.49 \times 10^5$), *L. minimus* ($1.69 \times 10^5$), *P. delicatissima* group ($1.17 \times 10^5$), and *S. costatum* ($2.24 \times 10^5$). In 1998, there were three species observed at concentrations greater that 100,000 cells $L^{-1}$ and the concentrations were all from Brandy Cove: *G. delicatula* ($2.12 \times 10^5$), *G. flaccida* ($1.62 \times 10^5$), and *S. costatum* ($1.05 \times 10^5$).

Only one dinoflagellate species was present in the greater than 10,000 cells $L^{-1}$ group in each of the years, 1997 (*Heterocapsa triquetra*) and 1998 (*Scrippsiella trochoidea*). Interestingly, *A. fundyense* was observed at concentrations greater than 10,000 cells $L^{-1}$ during the 4 yr 1993-96. During 1997 and 1998, the highest concentrations observed were 8200 and 6720 *A. fundyense* cells $L^{-1}$. *A. fundyense*, the organism responsible for producing paralytic shellfish toxins, is observed annually, but intensity of the bloom varies greatly from year to year. During most years, blooms are initiated in late May to early June with highest numbers observed in mid-July. In 1997, cells were observed at Deadmans Harbour and the Wolves Islands on April 21 and at Lime Kiln and Brandy Cove on May 13. Highest concentrations (8200 cells $L^{-1}$) were detected on June 24 at Deadmans Harbour. Where sampling was conducted at discrete depths at the Wolves, few cells were detected at depth. Cells persisted in the waters throughout the fall and into October. During 1998, *A. fundyense* numbers began to increase in early May and continued to be observed at low concentrations through late September. Figure 3 shows concentrations of *A. fundyense* from all four locations since 1988. Since 1995, the maximum concentrations during the bloom have been decreasing.

Additional samples for phytoplankton enumeration were collected during the late summer of 1998 when red-tide patches of the ciliate *M. rubrum* were observed in the mid- and northern Passamaquoddy Bay. Some patches were 20-50 m wide and as long as 1-2 km, although they were sometimes broken up into several lobes. *M. rubrum* was the dominant organism in the area and represented up to 95% of the total algal population. Surface water temperature was higher than at the four regular sampling sites (18°C) and salinity was 31.5-32.0 psu. All nutrient levels were lower in the red-tide area than those from Brandy Cove, where concentrations of *M. rubrum* were considerably lower, suggesting that *M. rubrum* cells were utilizing nutrients. Levels measured were: nitrate + nitrite - 0.20-0.48 µM in the red-tide area and 2.95-4.47 µM at Brandy Cove; ammonia - 2.29-3.88 and 3.86-4.10 µM, respectively; phosphate, 0.66-0.77 and 0.78-1.04 µM; and silicate, 3.97-5.82 and 5.08-7.33 µM.

The *P. delicatissima* group refers to a number of different species that are difficult to differentiate without the use of an electron microscope because of their small size in width (1.5-2.0 µm). They include *P. pseudodelicatissima* and *P. delicatissima*. The *P. seriata* group includes *P. multiseries* and *P. pungens*. Figure 4 shows an SEM photo of *P. multiseries* and *P. pungens* that co-exist in Bay of Fundy waters. In this report, *P. multiseries* and *P. pungens* are grouped into the *P. seriata* complex.

Table 2 shows the number of species observed on each sample day during the 6-yr period,

Table 2. Number of species observed on each day of sampling since 1993.

| Date | # species | Date | # species | Date | # species | Date | # species | Date | # species | Date | # species |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/7/93 | 23 | 1/11/94 | 21 | 1/26/95 | 27 | 1/23/96 | 21 | 1/20/97 | 29 | 1/20/98 | 17 |
| 2/12/93 | 27 | 2/8/94 | 18 | 2/27/95 | 21 | 2/20/96 | 20 | 2/24/97 | 35 | 2/10/98 | 28 |
| 3/9/93 | 18 | 3/15/94 | 29 | | | | | | | | |
| | | 3/29/94 | 32 | 3/20/95 | 25 | 3/19/96 | 23 | 3/18/97 | 30 | 3/26/98 | 35 |
| 4/15/93 | 32 | 4/28/94 | 30 | 4/17/95 | 37 | 4/29/96 | 42 | 4/21/97 | 44 | 4/21/98 | 35 |
| 5/12/93 | 46 | | | 5/10/95 | 42 | 5/8/96 | 47 | 5/13/97 | 45 | 5/12/98 | 70 |
| 5/26/93 | 43 | 5/17/94 | 26 | 5/23/95 | 46 | | | 5/20/97 | 48 | 5/19/98 | 69 |
| 6/1/93 | 57 | 5/24/94 | 46 | | | 5/22/96 | 56 | | | 5/26/98 | 69 |
| 6/7/93 | 48 | 6/7/94 | 38 | 6/6/95 | 54 | 6/6/96 | 52 | 6/3/97 | 50 | 6/2/98 | 59 |
| 6/15/93 | 54 | 6/14/94 | 47 | 6/13/95 | 50 | 6/10/96 | 57 | 6/10/97 | 61 | 6/9/98 | 65 |
| | | 6/21/94 | 43 | 6/21/95 | 52 | 6/17/96 | 54 | 6/17/97 | 59 | 6/17/98 | 72 |
| 6/24/93 | 48 | | | | | 6/25/96 | 64 | 6/24/97 | 58 | 6/23/98 | 50 |
| 6/29/93 | 51 | 6/28/94 | 55 | 6/27/95 | 56 | | | | | 6/29/98 | 46 |
| 7/6/93 | 59 | | | 7/5/95 | 49 | 7/9/96 | 44 | 7/9/97 | 44 | 7/7/98 | 51 |
| 7/13/93 | 61 | 7/11/94 | 62 | 7/12/95 | 45 | 7/15/96 | 37 | 7/14/97 | 41 | 7/14/98 | 61 |
| 7/20/93 | 59 | 7/19/94 | 62 | 7/19/95 | 48 | 7/23/96 | 35 | 7/21/97 | 41 | 7/21/98 | 66 |
| 7/26/93 | 59 | 7/26/94 | 63 | 7/24/95 | 38 | 7/30/96 | 39 | 7/29/97 | 42 | 7/28/98 | 53 |
| 8/3/93 | 60 | 8/4/94 | 53 | 8/2/95 | 32 | 8/6/96 | 43 | 8/5/97 | 48 | 8/4/98 | 54 |
| 8/10/93 | 62 | 8/9/94 | 50 | 8/8/95 | 39 | 8/12/96 | 44 | 8/10/97 | 55 | 8/11/98 | 64 |
| 8/16/93 | 57 | 8/16/94 | 47 | 8/17/95 | 47 | 8/20/96 | 45 | 8/19/97 | 61 | 8/18/98 | 51 |
| 8/23/93 | 49 | 8/23/94 | 50 | 8/22/95 | 58 | 8/27/96 | 58 | 8/26/97 | 51 | 8/25/98 | 53 |
| 8/30/93 | 57 | 8/30/94 | 66 | 8/29/95 | 52 | | | | | 9/1/98 | 62 |
| 9/7/93 | 43 | 9/6/94 | 53 | 9/5/95 | 55 | 9/9/96 | 46 | 9/3/97 | 66 | 9/8/98 | 67 |
| 9/13/93 | 34 | 9/13/94 | 52 | 9/12/95 | 53 | 9/17/96 | 51 | 9/15/97 | 65 | 9/15/98 | 61 |
| 9/20/93 | 31 | 9/20/94 | 58 | 9/20/95 | 65 | 9/24/96 | 51 | | | 9/22/98 | 54 |
| 9/27/93 | 40 | 9/27/94 | 54 | 9/26/95 | 54 | | | 10/1/97 | 68 | 9/29/98 | 50 |
| 10/12/93 | 27 | 10/4/94 | 43 | 10/10/95 | 57 | 10/8/96 | 48 | 10/14/97 | 61 | 10/13/98 | 59 |
| 10/25/93 | 39 | 10/17/94 | 45 | 10/24/95 | 41 | 10/21/96 | 50 | | | 10/26/98 | 50 |
| 11/12/93 | 33 | 11/17/94 | 25 | 11/22/95 | 34 | | | 11/12/97 | 49 | 11/10/98 | 52 |
| 11/23/93 | 24 | | | | | | | | | | |
| 12/7/93 | 32 | 12/13/94 | 24 | 12/19/95 | 29 | 12/17/96 | 37 | 12/9/97 | 51 | 12/8/98 | 43 |

1993-98. Highest numbers of organisms observed in any one sample day during each year were: 62 (1993), 66 (1994), 65 (1995), 64 (1996), 68 (1997), and 72 (1998). The 2 yr, 1997 and 1998, are interesting to note as numbers increased during those years. This also contributed to the degree of difficulty in analyzing samples and increased analysis time per sample.

## SALINITY

Salinity results are in Appendix 3. Lowest values during the 2 yr were measured at Station #17 (23.85) on May 20, 1997. Highest salinity values were measured at #16, the Wolves with 32.81 at bottom on September 1, 1998.

## TEMPERATURE

Water temperature ranged from 0.4 (March 19) to 15.5°C (August 10) in 1997 at Station #17 (Appendix 3). For the three other sample sites, the range was from 1.0–14.1°C (Station #15). Figure 5 shows temperature results from Brandy Cove and Deadmans Harbour from 1988 through 1998.

## NUTRIENT ANALYSES

Nutrient results are located in Appendix 3. Silicate values ranged from 0.44 (Station #15, June 23, 1997) to 14.6 µM (Station #17, March 26, 1998). Phosphate ranged from 0.34 (Station #16 – 10 m, August 18, 1998) to 1.13 µM (Station #3, November

12, 1997). Nitrate values were between 0.03 (Station #16 – 10 m, August 18, 1998) and 9.87 µM (Station #16 – 50 m, December 8, 1998). Nitrite ranged from 0.03 (Station #16 – 10 m, August 18, 1998) to 0.71 µM (Station #17, October 14, 1997). Ammonia values ranged from 1.86-7.63 µM in 1997 with both extremes observed at the Wolves (Station #16 - 25 m, October 14 and at the surface, September 3, respectively). During 1998, the ammonia levels ranged from 1.18-6.72 µM, with the low value again measured on November 10 at the Wolves at 25 m and the high value detected at the surface on May 12 at Lime Kiln Bay, #3. Silicate, phosphate and nitrate values for Lime Kiln and Deadmans are plotted on Fig. 6-8.

## DISCUSSION

The majority of phytoplankton and smaller zooplankton occur in the Bay of Fundy without causing adverse effects. Prior to 1988, the species of major concern was *A. fundyense*, which is responsible for unsafe levels of toxins in shellfish. It was a well established fact that shellfish harvesting areas would be closed to harvesting at some time during the year – generally during the summer months. Shellfish are monitored for toxins at regular intervals (through a program that was initiated in 1944 and is now one of the longest continuous datasets of its kind in the world) by the Canadian Food Inspection Agency. Records indicate that shellfish in the Bay of Fundy become toxic every year. This is not surprising as the presence of very few cells in a plankton net haul or as few as 20 cells $L^{-1}$ can result in PSP toxins at a detectable level in shellfish from an adjacent area. Unfortunately, in the early stages of setting up the monitoring program, the wild blue mussel (*Mytilus edulis*) industry was closed to harvesting in 1944 and has never reopened. Data from this monitoring program, as well as toxin uptake and depuration studies, indicate that during a good part of the year it would be possible to harvest mussels that would be safe for consumption and below the regulatory limit for harvesting. Certain regions such as Passamaquoddy Bay would be potential sites for mussel culture as the numbers of *A. fundyense* tend to be lower than in the areas more exposed to offshore waters and higher concentrations of *A. fundyense* cells.

Fish kills were experienced in the late 1970s as a result of PSP toxins that had gone through the food chain and ultimately killed hundreds of tonnes of herring held captive in herring weirs. Also, in the mid-1980s, PSP toxins were detected in mackerel and implicated in whale mortalities. However, results from the monitoring program indicate that the 1990s have been years with low concentrations of *A. fundyense*. Results from the monitoring program indicate that numbers since 1987 have been considerably lower than the high concentrations observed in the late 1970s and in 1980 when concentrations as high as 1 million cells $L^{-1}$ were observed. A number of parameters such as environmental data, phytoplankton community structure, and trend analyses are being examined to further understand this pattern.

Red tides caused by the organism *M. rubrum* were observed in Passamaquoddy Bay during the 4 wk of August 20 through September 17, 1998. During the red-water events, brick-red patches of cells were observed drifting through some salmon farms. *M. rubrum* concentrations observed in water samples collected from waters with discolouration exceeded 1 million cells $L^{-1}$. As a result, an additional monitoring site was added in mid-Passamaquoddy Bay. This red tide resulted in the salmon aquaculture industry being impacted by algal blooms for the first time in northern Passamaquoddy Bay when low level mortalities were observed. Although red tides of *M. rubrum* had been observed in this area in previous years, the number of aquaculture operations in the area was minimal; however, numbers of sites increased in the fall of 1997 as a result of sites relocating from the Lime Kiln area.

Although *M. rubrum* does not produce a toxin, it is possible for stress and mortalities among aquatic organisms to occur through secondary effects such as asphyxiation as a result of oxygen depletion. The red tide of 1998 caused low level salmon mortalities during late stages of the bloom or during bloom decay. Salmon exhibited symptoms of stress associated with low oxygen resulting from a combination of the red tide, decreased currents and elevated temperatures. Oceanographic processes controlling phytoplankton dynamics in the area indicate that upper Passamaquoddy Bay waters are suitable for high primary production and the generation of red tides as a result of the area being shallow, warm, having low flushing rates and stratification in August (Trites and Garrett 1983; Fred Page, Biological Station, 531 Brandy Cove Road, St. Andrews, NB E5B 2L9, pers. commun.). This phenomenon of water discolouration as a result of high concentrations of *M. rubrum* has been observed in both the presence and absence of aquaculture – for example, red-water sightings prior to 1998 were observed during 1975, '77, '79, '89, and '93 (White et al. 1977; Jennifer Martin, Biological Station, 531

Brandy Cove Road, St. Andrews, NB E5B 2L9, pers. commun.). Although results from the Brandy Cove monitoring site indicate that *M. rubrum* occurs annually in the region, it was found that it rarely forms dense aggregates in the Saint Croix River; therefore, the mid-Passamaquoddy Bay site would be better suited to studying northern Passsamaquoddy Bay blooms. As a result, this site was added to the regular sampling program.

Species that have been observed in the Bay of Fundy that have been known to cause problems elsewhere in Canada or the world include: *Dinophysis* spp. (Fernández et al. 1998), *Prorocentrum* spp. (Lawrence 1998) (diarrhetic shellfish toxins); *C. convolutus*, *C. concavicornis* (Horner et al. 1990, 1997), *Gyrodinium aureolum* (Dahl and Tangen 1990, 1993; Romdhane et al. 1998) and *L. minimus* (Clément and Lembeye 1993; Albright 1993) (salmon mortalities). Although these species are known to occur each year in the Fundy region, there have not been any documented incidents of harmful effects to date.

The *P. delicatissima* group of cells, which includes *P. pseudodelicatissima* and *P. delicatissima*, has been observed at concentrations greater than 10,000 cells $L^{-1}$ during each year of the sampling. Further culture and SEM work needs to continue on these strains of *Pseudo-nitzschia* to determine which particular species occurs at a particular time or, if they co-exist, at what proportions they exist in nature.

*P. pseudodelicatissima* was only observed at densities great enough to produce domoic acid during 1988 and 1995. Highest concentrations observed in the 2-yr period of this study were $1.7 \times 10^5$ cells $L^{-1}$ at a depth of 10 m at the Wolves on June 17, 1997. The next highest value observed was $7.68 \times 10^4$ cells $L^{-1}$ at the surface at Deadmans Harbour on June 3, 1997. Analyses of large quantities of cells collected in plankton tows from the earlier May/June blooms did not produce detectable levels of domoic acid. However, those from the later August/September blooms (concentrations exceeding 1 million cells $L^{-1}$ in 1988 and 1995) were associated with domoic acid production (when shellfish exceeded the regulatory limit for domoic acid).

Unfortunately we are unable to predict phytoplankton densities from year to year. We are, however, able to provide an early warning to industry and regulatory agencies of the progress of a particular bloom. During the 1998 *M. rubrum* red tide, we were able to do more cooperative work with the salmon aquaculture industry to study the bloom. It is important to understand that every species is unique and information particular to one species cannot be applied to another – especially when trying to determine mitigation measures. Monitoring indicates wide interannual variation in density of populations and the necessity to monitor, at the very least weekly, in order to provide an early warning. In addition, as industries expand and new industries are introduced, environmental monitoring is essential.

In the future, should fish pens be located in areas prone to red tides, we recommend monitoring during the period when red tides are common. For this particular region, this is late summer. For areas with little historical data, if water discoloration is observed, monitoring should be initiated. Identification of the causative organism is essential as every species is unique and behavioral patterns can differ according to species and geographic location. As the upper Passamaquoddy Bay is susceptible to red tides, it is recommended that waters be monitored, at minimum, on a weekly basis and authorized personnel notified of water discoloration for research and advice on mitigation techniques. From the results of these observations, phytoplankton is an essential component to be measured. Additional knowledge of the physical oceanography of the area would contribute towards better understanding events such as bloom initiation, transport and decay.

## ACKNOWLEDGMENTS

We thank Captain Wayne Miner of the PANDALUS III for assisting with the field sampling and Shawn Robinson and Fred Page for the use of their CTDs. Jim Ehrman assisted with the SEM work. Brenda Best formatted the manuscript, Blythe Chang provided a map and Marilynn Rudi helped with editing. Kats Haya and Jim Martin reviewed the manuscript.

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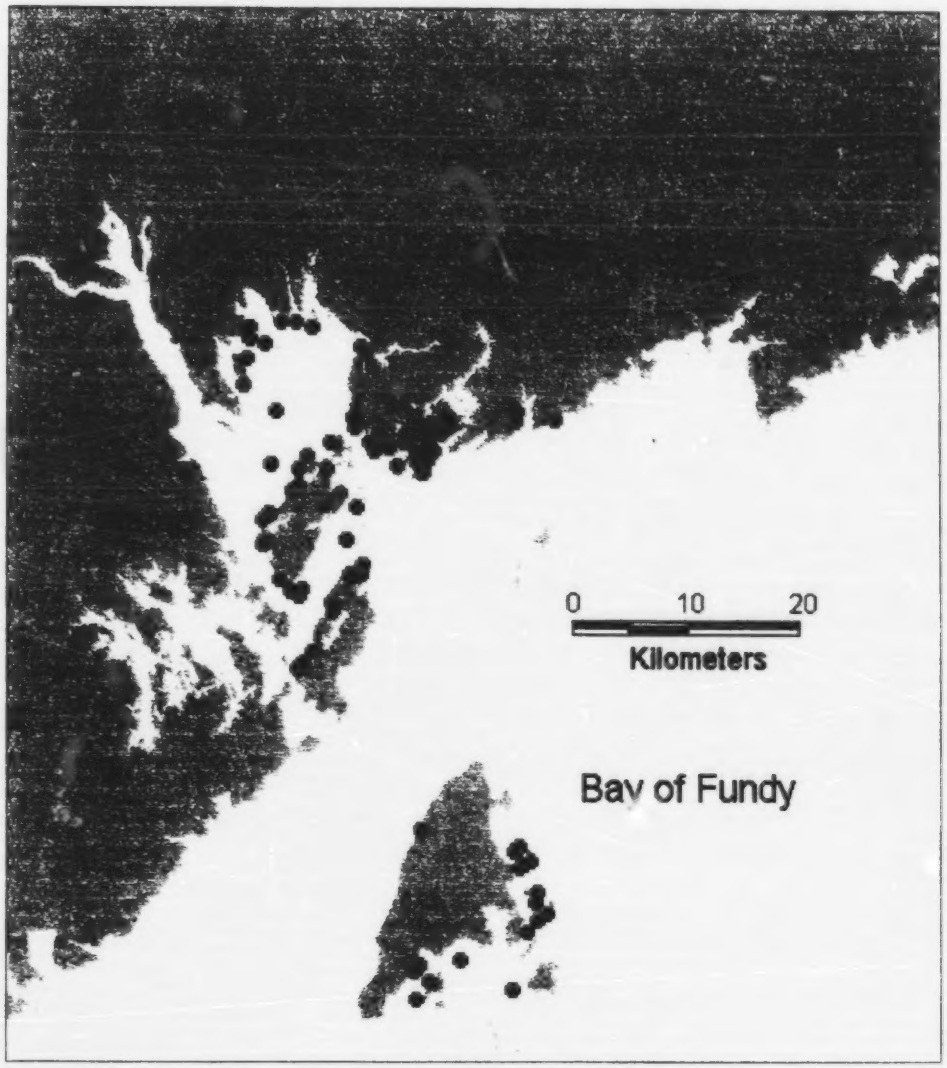


Fig. 1. Locations of salmonid aquaculture sites in 1998.

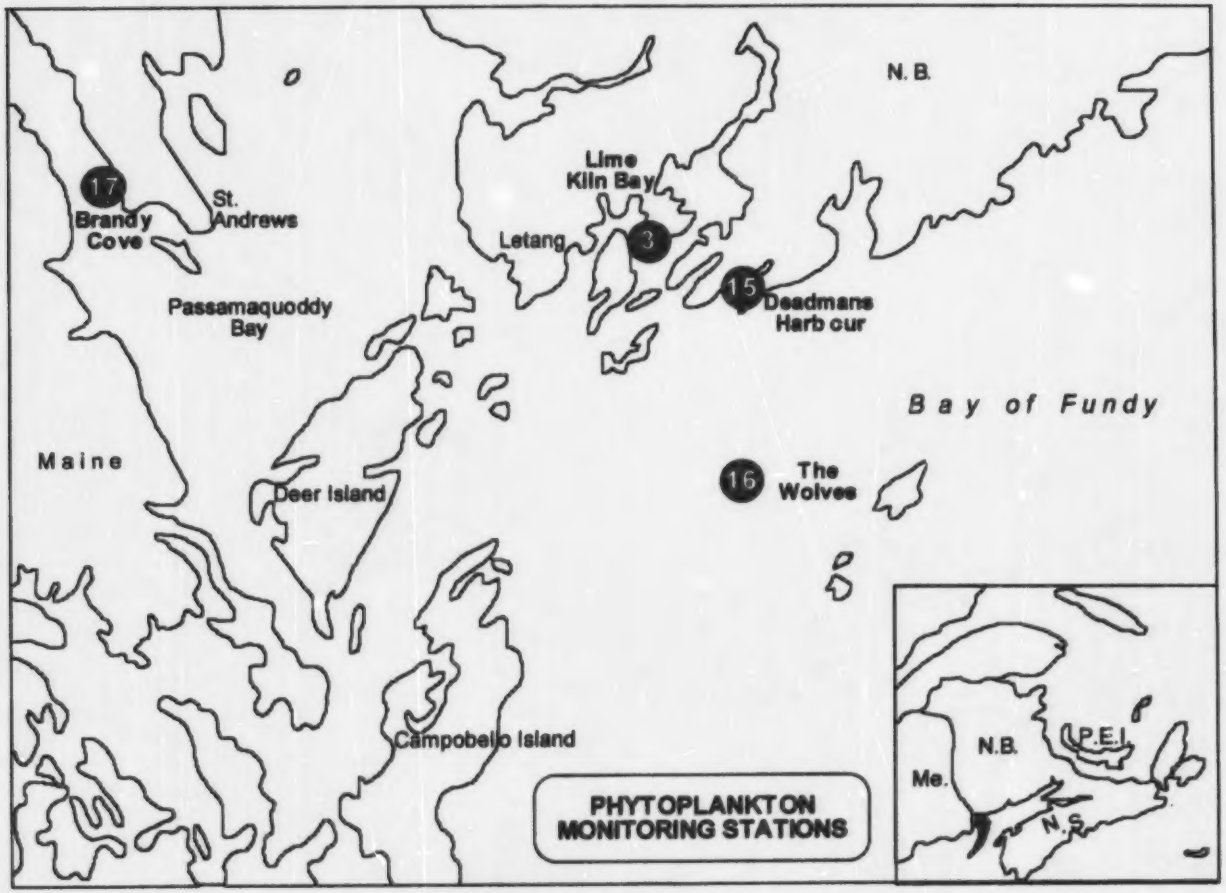


Fig. 2. Sampling stations - Brandy Cove (#17), Lime Kiln (#3), Deadmans Harbour (#15), and near the Wolves Islands (#16).

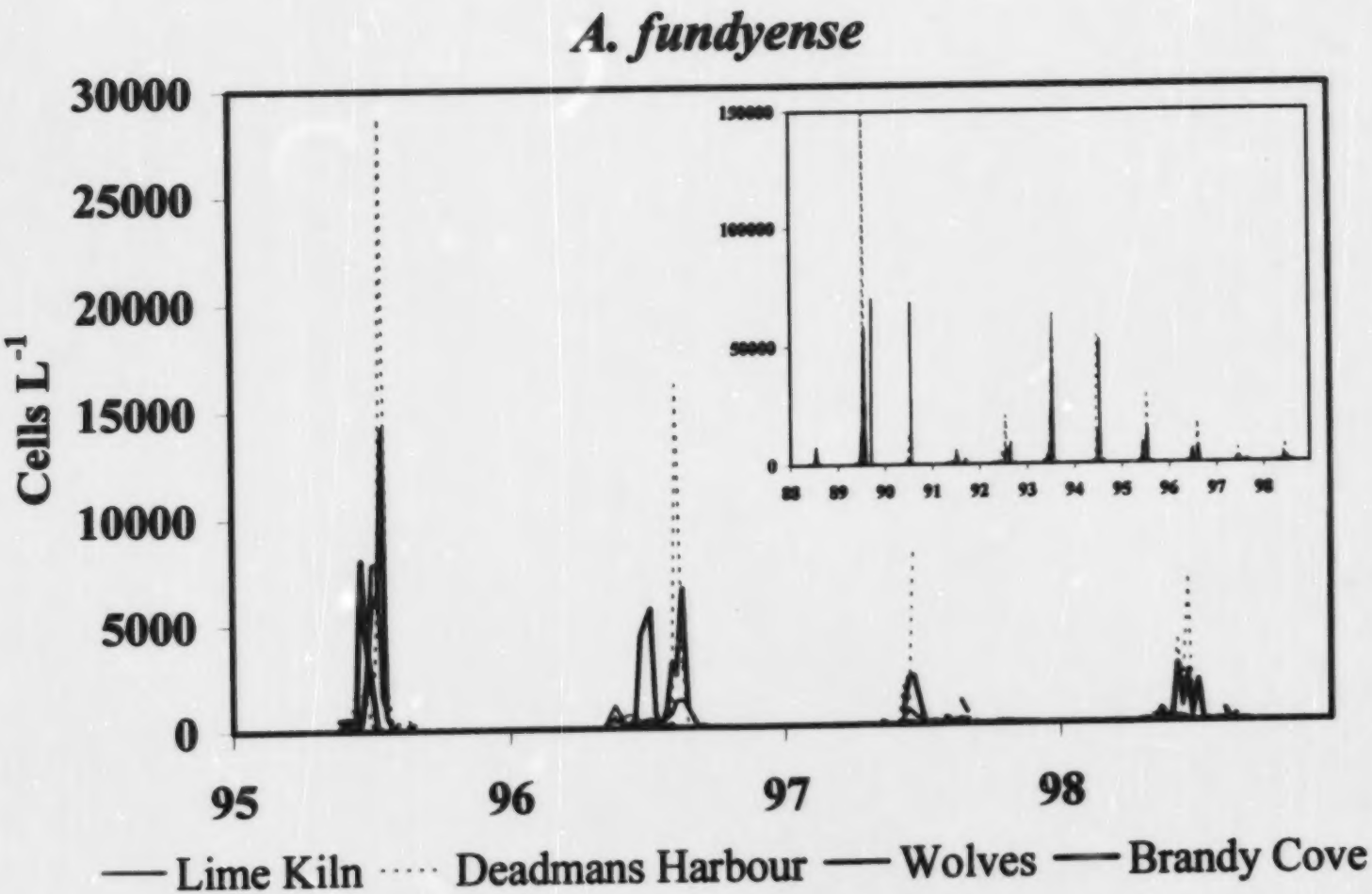


Fig. 3. *Alexandrium fundyense* concentrations at Lime Kiln Bay, Deadmans Harbour, the Wolves and Brandy Cove, 1995-98.

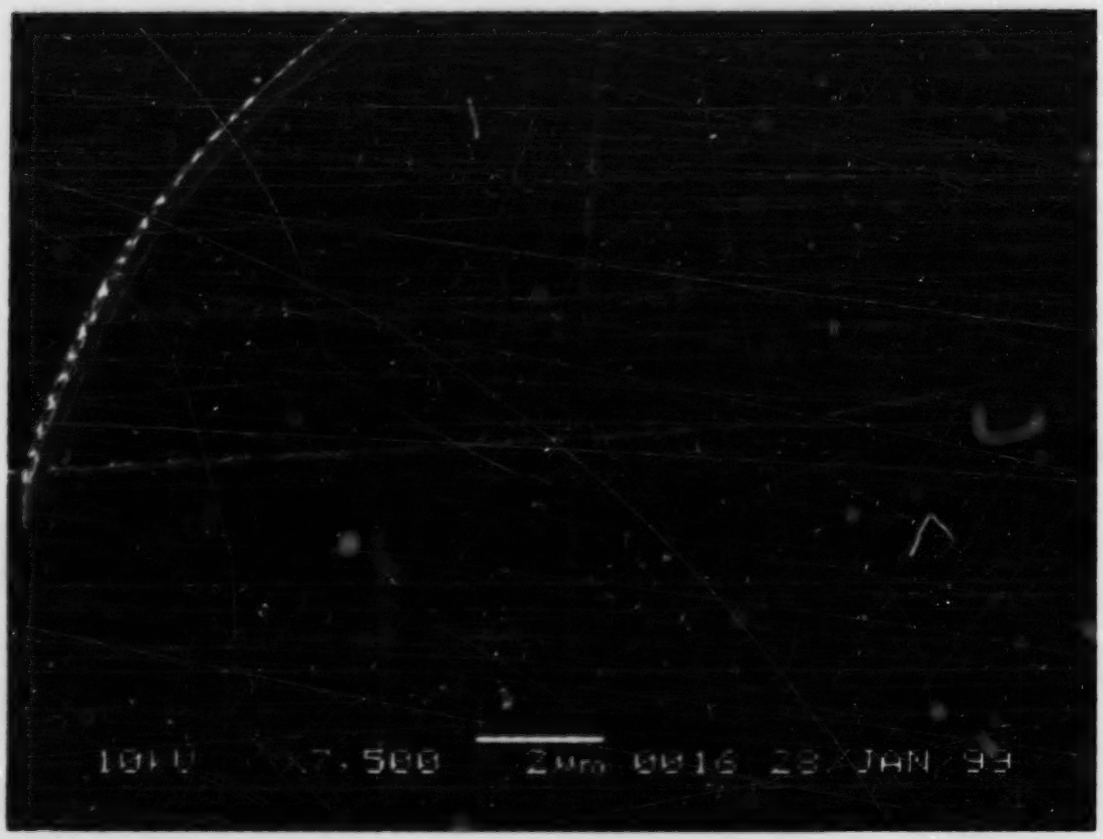


Fig. 4. SEM photo of *P. multiseries* and *P. pungens* that co-exist in the Bay of Fundy waters.

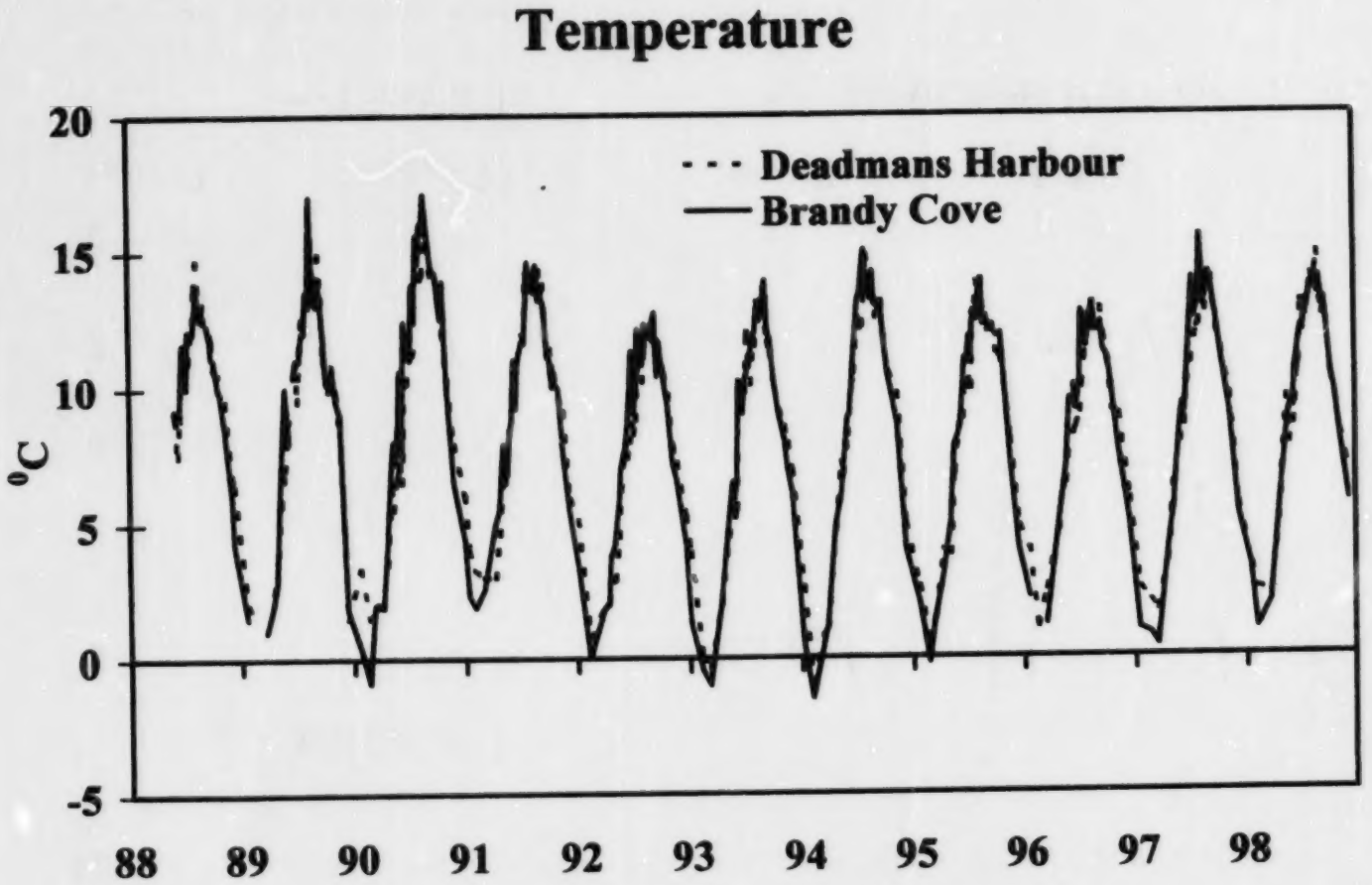


Fig. 5. Surface temperatures at Deadmans Harbour and Brandy Cove for 1988-98.

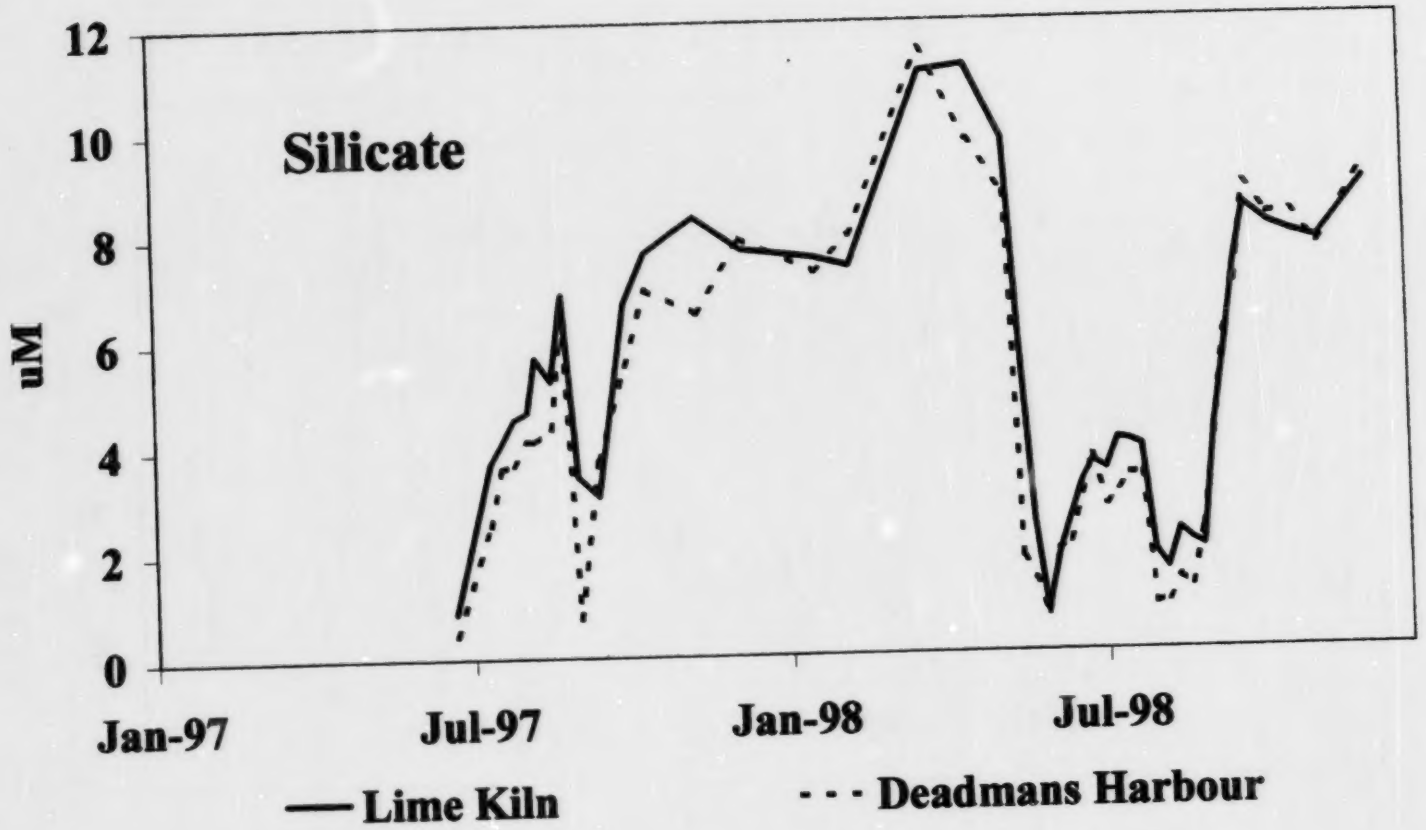


Fig. 6. Silicate values at Lime Kiln Bay and Deadmans Harbour 1997-98.

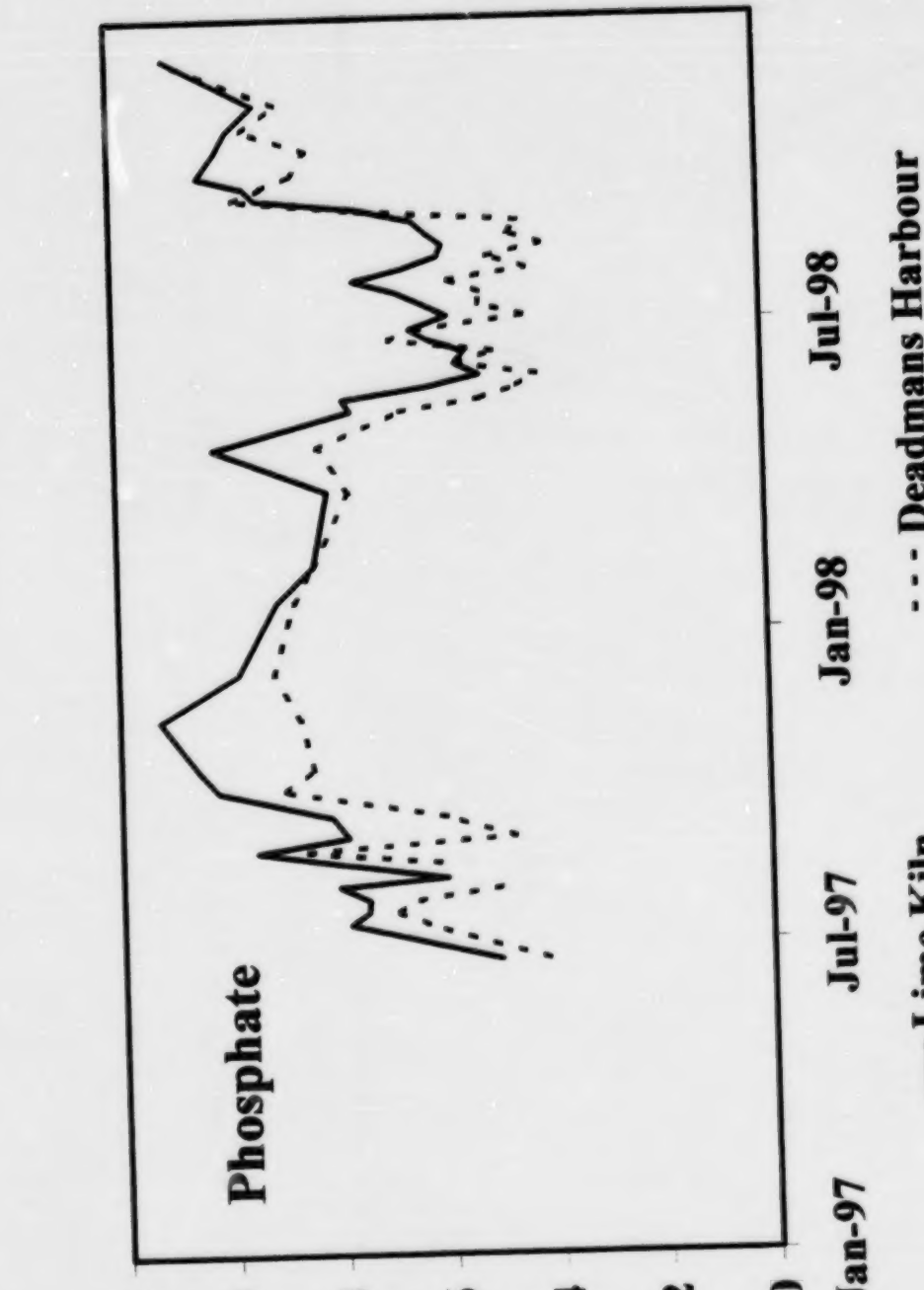


Fig. 7. Phosphate values at Lime Kiln Bay and Deadmans Harbour 1997-98.

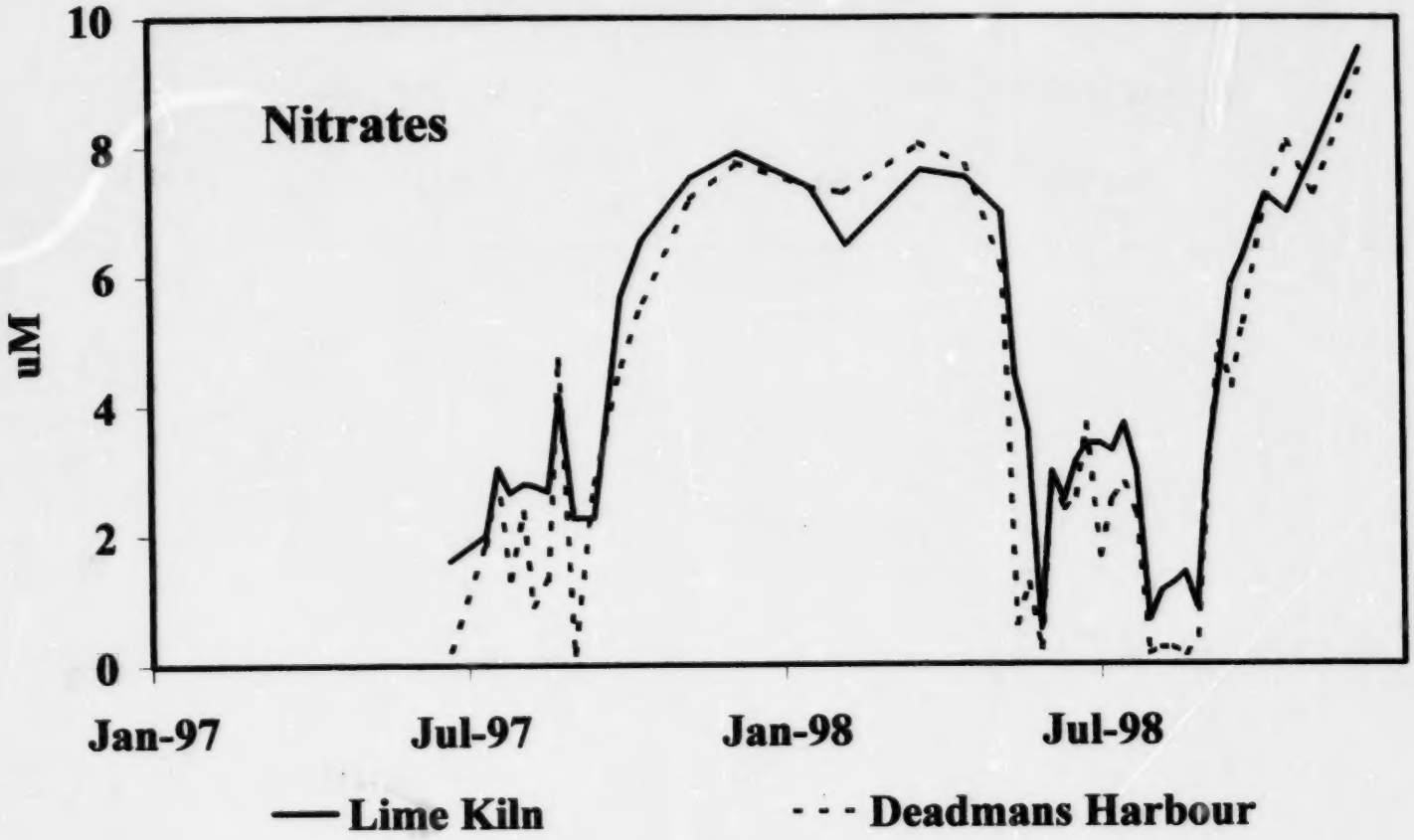


Fig. 8. Nitrate values at Lime Kiln Bay and Deadmans Harbour 1997-98.

**Appendix 1. Species observed during 1997-98.**

## Species list for 1997 & 1998

### Dinoflagellates

*Alexandrium fundyense*
*Alexandrium fundyense* (cyst)
*Alexandrium fundyense* (duplet)
*Alexandrium fundyense* (fusing)
*Alexandrium fundyense* (quadruplet)
*Alexandrium fundyense* (triplet)
*Alexandrium ostenfeldii*
*Amylax triacantha*
Armoured dinoflagellate
*Ceratium arcticum*
*Ceratium fusus*
*Ceratium horridum*
*Ceratium kofoidii*
*Ceratium lineatum*
*Ceratium longipes*
*Ceratium minutum*
*Ceratium spp.*
*Ceratium tripos*
*Dinophysis acuminata*
*Dinophysis acuta*
*Dinophysis norvegica*
*Dinophysis pulchella*
*Dinophysis spp.*
*Gonyaulax digitale*
*Gonyaulax spinifera*
*Gyrodinium spp.*
*Heterocapsa triquetra*
*Minuscula bipes*
*Phalacroma rotundatum*
*Prorocentrum micans*
*Prorocentrum minimum*
*Prorocentrum spp.*
*Protoperidinium brevipes*
*Protoperidinium conicum*
*Protoperidinium denticulatum*
*Protoperidinium depressum*
*Protoperidinium divergens*
*Protoperidinium excentricum*
*Protoperidinium leonis*
*Protoperidinium ovatum*
*Protoperidinium spp.*
*Scrippsiella trochoidea*
Unarmoured dinoflagellate

### Diatoms

*Achnanthes spp.*
*Actinoptychus senarius*
*Asterionella formosa*
*Asterionella spp.*
*Asterionellopsis glacialis*
*Asterionellopsis kariana*
*Bacillaria paxillifer*
*Bacterosira bathyomphala*
*Cerataulina pelagica*
*Chaetoceros affinis*
*Chaetoceros altanticus*
*Chaetoceros borealis*
*Chaetoceros brevis*
*Chaetoceros compressus*
*Chaetoceros concavicornis*
*Chaetoceros constrictus*
*Chaetoceros convolutus*
*Chaetoceros convolutus* var. *trisetosa*
*Chaetoceros danicus*
*Chaetoceros debilis*
*Chaetoceros decipiens*
*Chaetoceros diadema*
*Chaetoceros didymus*
*Chaetoceros furcellatus*
*Chaetoceros ingolfianus*
*Chaetoceros laciniosus*
*Chaetoceros lorenzianus*
*Chaetoceros perpusillus*
*Chaetoceros similis*
*Chaetoceros simplex*
*Chaetoceros socialis*
*Chaetoceros spp.*
*Chaetoceros spp.* (phaeoceros)
*Chaetoceros subtilis*
*Chaetoceros tenuissimus*
*Chaetoceros teres*
*Corethron criophilum*
*Coscinodiscus spp.*
*Cyclotella spp.*
*Cylindrotheca closterium*
*Dactyliosolen fragilissimus*
*Detonula pumila*
*Ditylum brightwellii*
*Eucampia groenlandica*

**Diatoms (continued)**

*Eucampia spp.*
*Eucampia zodiacus*
*Fragilaria spp.*
*Grammatophora marina*
*Guinardia delicatula*
*Guinardia flaccida*
*Guinardia striata*
*Gyrosigma fasciola*
*Gyrosigma littorale*
*Gyrosigma tennuissimum*
*Helicotheca tamesis*
*Lauderia annulata*
*Leptocylindrus danicus*
*Leptocylindrus mediterraneus*
*Leptocylindrus minimus*
*Licmophora abbreviata*
*Licmophora flabellata*
*Lithodesmium undulatum*
*Melosira ambigua*
*Melosira monoliformis*
*Melosira spp.*
*Navicula spp.*
*Odontella aurita*
*Odontella obtusa*
*Odontella regia*
*Paralia marina*
Pennate diatom
*Pleurosigma / Gyrosigma*
*Pleurosigma angulatum*
*Pleurosigma angulatum* var. *strigosa*
*Porosira glacialis*
*Proboscia alata*
*Pseudo-nitzschia delicatissima* group
*Pseudo-nitzschia seriata* group
*Pseudo-nitzschia spp.*
*Rhabdonema spp.*
*Rhizosolenia hebetata*
*Rhizosolenia imbricata*
*Rhizosolenia pungens*
*Rhizosolenia setigera*
*Rhizosolenia spp.*
*Skeletonema costatum*
*Stephanopyxis turris*
*Striatella unipunctata*
*Thalassionema nitzschioides*
*Thalassiosira angulata*
*Thalassiosira auguste-lineata*
*Thalassiosira baltica*
*Thalassiosira decipiens*
*Thalassiosira gravida*
*Thalassiosira nordenskioeldii*
*Thalassiosira oestrupii*
*Thalassiosira rotula*
*Thalassiosira spp.*
*Triceratium alternans*

**Others**

*Brachionus spp.*
Copepoda
*Dictyocha speculum*
*Dinobryon spp.*
*Ebria tripartita*
Eutreptia / Eutreptiella
*Favella spp.*
*Helicostomella spp.*
*Mesodinium rubrum*
*Notholca spp.*
*Parafavella spp.*
*Ptychocylis spp.*
*Salpingella spp.*
Tintinnids

**Appendix 2. Phytoplankton densities as number of cells $L^{-1}$ in 1997-98.**

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **20-Jan-97** | | | | | | | |
| Armoured dinoflagellate | | | | 20 | | | |
| *Ceratium lineatum* | | | | | 20 | | |
| *Ceratium spp.* | | | | 20 | | | |
| *Ceratium tripos* | | | | | | | 20 |
| *Prorocentrum micans* | 20 | | | | | | |
| *Actinoptychus senarius* | | | | 80 | | | |
| *Asterionella formosa* | | | | | | | 20 |
| *Asterionellopsis glacialis* | 40 | | | | | | |
| *Chaetoceros spp.* | 40 | | | | | | |
| *Coscinodiscus spp.* | | | | | | 20 | |
| *Cylindrotheca closterium* | 200 | 80 | | 280 | 480 | 280 | 100 |
| *Ditylum brightwellii* | | 20 | | | 20 | 20 | 20 |
| *Grammatophora marina* | 20 | | | | | | |
| *Guinardia delicatula* | 40 | | | | 40 | | 20 |
| *Leptocylindrus minimus* | 20 | | | 40 | | | 20 |
| *Licmophora flabellata* | 240 | 20 | | | | | |
| *Lithodesmium undulatum* | | 20 | | | | | |
| *Navicula spp.* | 40 | 20 | | 20 | 20 | 20 | |
| *Odontella obtusa* | 20 | | | | | | |
| *Pseudo-nitzschia delicatissima* group | 200 | 120 | | 180 | 80 | 40 | |
| *Pseudo-nitzschia seriata* group | | | | 20 | | | 20 |
| *Rhabdonema spp.* | | | | | | | 20 |
| *Skeletonema costatum* | 40 | | | 20 | | 20 | |
| *Thalassiosira spp.* | | | | | 40 | | |
| Copepoda | | 20 | | | | | |
| *Dictyocha speculum* | | 20 | | | | | 20 |
| *Helicostomella spp.* | | 20 | | | | | |
| *Mesodinium rubrum* | 20 | 40 | | 100 | | | 100 |
| Tintinnida | | 60 | | 100 | | | 20 |
| **24-Feb-97** | | | | | | | |
| Armoured dinoflagellate | | | | | 20 | | |
| *Actinoptychus senarius* | 40 | | | | | | |
| *Asterionellopsis glacialis* | | | | 60 | 20 | | |
| *Asterionellopsis kariana* | | | | | | 20 | |
| *Chaetoceros altanticus* | 20 | | | | | | |
| *Chaetoceros spp.* | | | 40 | 20 | | | |
| *Chaetoceros subtilis* | | | | | 20 | | |
| *Coscinodiscus spp.* | | 20 | | 40 | 60 | | |
| *Cylindrotheca closterium* | 60 | 20 | 80 | 380 | 280 | 40 | |
| *Ditylum brightwellii* | 40 | | 20 | | | | |
| *Grammatophora marina* | 120 | | | | | | |
| *Guinardia delicatula* | | | | 20 | | | |
| *Gyrosigma fasciola* | 20 | | | | | | |
| *Helicotheca tamesis* | | | | | 20 | | |
| *Leptocylindrus minimus* | 20 | | | 40 | | | |
| *Licmophora abbreviata* | 80 | | | | | | |
| *Lithodesmium undulatum* | | | | 60 | 20 | | |
| *Melosira ambigua* | | | | | | 20 | |
| *Melosira moniliformis* | 200 | | | | | | |
| *Melosira spp.* | | | | | | 20 | |
| *Navicula spp.* | 100 | 80 | 20 | 20 | 100 | 60 | 20 |
| *Odontella aurita* | 140 | | | | | | |
| *Paralia marina* | | | | | 20 | | |
| *Pleurosigma / Gyrosigma* | | | 20 | 40 | | | |
| *Pleurosigma angulatum* | | 40 | | | | | |
| *Pseudo-nitzschia delicatissima* group | 160 | 260 | 240 | 460 | 460 | 100 | 20 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **24-Feb-97 (continued)** | | | | | | | |
| *Rhabdonema spp.* | 20 | | | | | | |
| *Rhizosolenia setigera* | 20 | | | | | | |
| *Skeletonema costatum* | 20 | | 60 | 100 | 120 | 40 | |
| *Thalassionema nitzschioides* | | 20 | 20 | 20 | 40 | | |
| *Thalassiosira spp.* | | | | | | 20 | |
| Copepoda | | | | | | | 20 |
| *Dictyocha speculum* | 20 | | 20 | | | | |
| *Mesodinium rubrum* | | | 40 | | | | |
| Tintinnids | | | | 20 | | | 60 |
| **18-Mar-97** | | | | | | | |
| Armoured dinoflagellate | | | | | 20 | | 20 |
| *Asterionella formosa* | | | | | | | 40 |
| *Asterionellopsis glacialis* | | | | | 20 | | |
| *Chaetoceros spp.* | | 20 | 60 | 40 | | | |
| *Corethron criophilum* | | | | | | | 20 |
| *Coscinodiscus spp.* | | | 40 | | | | |
| *Cylindrotheca closterium* | | 20 | 80 | 40 | 60 | 120 | |
| *Ditylum brightwellii* | 20 | | 20 | | | 60 | |
| *Grammatophora marina* | | | | | | | 20 |
| *Guinardia delicatula* | | | 20 | | | | |
| *Lauderia annulata* | | | | | | 20 | |
| *Leptocylindrus minimus* | 20 | | | | 20 | | |
| *Lithodesmium undulatum* | | | | 20 | | | |
| *Melosira ambigua* | | | | 20 | | | |
| *Melosira spp.* | | | | 20 | | | |
| *Navicula spp.* | | 60 | | | | 80 | 40 |
| *Odontella aurita* | | | | 20 | | | |
| *Pleurosigma / Gyrosigma* | | 20 | | | | | |
| *Pleurosigma angulatum* var. *strigosa* | | | 20 | | | | |
| *Porosira glacialis* | 20 | | | | | | |
| *Pseudo-nitzschia delicatissima* group | 260 | 300 | 460 | 260 | 80 | 260 | 200 |
| *Pseudo-nitzschia seriata* group | | 20 | | | | | |
| *Skeletonema costatum* | | 40 | 80 | | 100 | 40 | 140 |
| *Thalassionema nitzschioides* | | | | 20 | | | |
| *Thalassiosira gravida* | | | | | | 40 | |
| *Thalassiosira spp.* | | 20 | | 20 | | 40 | 40 |
| Copepoda | | | | | 20 | | |
| *Dictyocha speculum* | 20 | | 20 | | 20 | 20 | |
| *Dinobryon spp.* | | | | | | | 20 |
| *Mesodinium rubrum* | | | | 20 | | | 80 |
| **21-Apr-97** | | | | | | | |
| *Alexandrium fundyense* | | 40 | 20 | | | | |
| Armoured dinoflagellate | 20 | | 20 | 20 | | | 20 |
| *Ceratium lineatum* | | 20 | | | | | |
| *Ceratium tripos* | | | | | | 20 | |
| *Achnanthes spp.* | 20 | | | | | | |
| *Asterionellopsis glacialis* | | 40 | | | 80 | | |
| *Asterionellopsis kariana* | | | | | 20 | 20 | |
| *Chaetoceros constrictus* | | | | 20 | | | |
| *Chaetoceros debilis* | 20 | | 20 | 60 | 60 | | 260 |
| *Chaetoceros ingolfianus* | | | 80 | | | | 20 |
| *Chaetoceros simplex* | | | | | 60 | | |
| *Chaetoceros spp.* | 260 | 80 | 420 | 420 | 160 | 60 | 940 |
| *Chaetoceros subtilis* | | | | | 20 | | |
| *Coscinodiscus spp.* | 20 | | | 20 | | 20 | |
| *Cylindrotheca closterium* | 40 | 60 | 140 | 60 | 100 | 200 | 20 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **21-Apr-97 (continued)** | | | | | | | |
| *Dactyliosolen fragilissimus* | 20 | | | | | | |
| *Detonula pumila* | | 100 | | | | 20 | |
| *Ditylum brightwellii* | | | | 100 | 20 | 20 | |
| *Grammatophora marina* | | | | 20 | | | |
| *Guinardia delicatula* | | 40 | | | | | 20 |
| *Gyrosigma fasciola* | | | | | | 20 | 20 |
| *Leptocylindrus minimus* | 20 | 40 | 20 | 40 | | | 40 |
| *Licmophora abbreviata* | 40 | | 20 | | | | 20 |
| *Melosira monoliformis* | 40 | 40 | | | | | |
| *Melosira spp.* | | | | | | 20 | |
| *Navicula spp.* | 40 | 20 | 60 | 80 | 40 | 80 | 60 |
| *Odontella aurita* | | | | | 40 | 20 | |
| *Odontella regia* | | | | | | | 20 |
| *Porosira glacialis* | | | 20 | | | | |
| *Pseudo-nitzschia delicatissima* group | 460 | 1900 | 700 | 860 | 900 | 660 | 300 |
| *Pseudo-nitzschia seriata* group | | | 80 | | | | |
| *Rhabdonema spp.* | 20 | | | 20 | | | |
| *Rhizosolenia setigera* | | | | | | 40 | |
| *Skeletonema costatum* | 120 | 60 | 120 | 100 | 200 | 140 | 20 |
| *Thalassionema nitzschioides* | | | | | | | 20 |
| *Thalassiosira auguste-lineata* | 20 | 20 | 60 | | | | 20 |
| *Thalassiosira decipiens* | 80 | | 40 | | | | 20 |
| *Thalassiosira gravida* | 40 | 60 | 20 | 20 | 20 | 40 | 60 |
| *Thalassiosira nordenskioeldii* | 420 | 40 | 260 | 420 | 300 | | 800 |
| *Thalassiosira spp.* | 460 | | 320 | 560 | 60 | 20 | 1420 |
| *Dictyocha speculum* | | 20 | | 20 | | | |
| *Mesodinium rubrum* | 120 | 20 | 40 | 20 | | 20 | 460 |
| *Ptychocylis spp.* | | | | 40 | | | |
| Tintinnids | 40 | 20 | | 40 | | | 100 |
| **13-May-97** | | | | | | | |
| *Alexandrium fundyense* | 40 | | 160 | | | | 40 |
| *Alexandrium fundyense* (duplet) | | | 40 | | | | |
| Armoured dinoflagellate | 80 | 40 | 40 | 20 | | 20 | 40 |
| *Protoperidinium spp.* | 40 | | | | | | 120 |
| *Scrippsiella trochoidea* | 40 | | | | | | |
| *Achnanthes spp.* | 40 | | | | | | |
| *Asterionellopsis glacialis* | | | | | | 20 | |
| *Cerataulina pelagica* | | | | | 20 | | |
| *Chaetoceros affinis* | | | 120 | | | | |
| *Chaetoceros compressus* | 40 | | | 40 | | 20 | 80 |
| *Chaetoceros debilis* | 880 | 360 | 1080 | 1300 | 240 | 300 | 1200 |
| *Chaetoceros diadema* | | | 40 | 60 | | | |
| *Chaetoceros furcellatus* | 40 | | 880 | 920 | 380 | 340 | 80 |
| *Chaetoceros ingolfianus* | 440 | 320 | 760 | 500 | 40 | 60 | 1000 |
| *Chaetoceros laciniosus* | 40 | | | 20 | | | 40 |
| *Chaetoceros perpusillus* | | | 200 | 80 | | | 80 |
| *Chaetoceros simplex* | 80 | | 40 | | | | 40 |
| *Chaetoceros spp.* | 1000 | 600 | 1200 | 1100 | 400 | 320 | 1840 |
| *Coscinodiscus spp.* | | | | | | 20 | |
| *Dactyliosolen fragilissimus* | | | | 20 | | | |
| *Ditylum brightwellii* | 40 | 40 | 80 | | 20 | 40 | 40 |
| *Guinardia delicatula* | | | 40 | | | | |
| *Gyrosigma fasciola* | 40 | | | | | | |
| *Lauderia annulata* | | | | 20 | | | |
| *Leptocylindrus minimus* | 120 | 200 | | 160 | | 20 | 80 |
| *Melosira spp.* | | | | | | 20 | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **13-May-97 (continued)** | | | | | | | |
| *Navicula spp.* | | | | 20 | 100 | 40 | 40 |
| *Odontella aurita* | | | 40 | | 20 | | |
| *Pleurosigma / Gyrosigma* | | | | | | | 40 |
| *Porosira glacialis* | 40 | 40 | | 20 | | 20 | 80 |
| *Pseudo-nitzschia delicatissima* group | 2480 | 3240 | 1600 | 1260 | 700 | 520 | 1120 |
| *Pseudo-nitzschia seriata* group | 40 | | | | | | |
| *Rhizosolenia setigera* | 40 | | | | | | |
| *Skeletonema costatum* | 360 | 640 | 160 | 420 | 240 | 220 | 160 |
| *Thalassionema nitzschioides* | 40 | 40 | | | 20 | 20 | |
| *Thalassiosira auguste-lineata* | | | 120 | 60 | | 40 | |
| *Thalassiosira baltica* | | | | | 20 | | 40 |
| *Thalassiosira decipiens* | 1600 | 1240 | 2080 | 2580 | 680 | 680 | 2240 |
| *Thalassiosira gravida* | 120 | 200 | 80 | 160 | 40 | 80 | 160 |
| *Thalassiosira nordenskioeldii* | 7760 | 5920 | 8760 | 9700 | 3720 | 2500 | 9960 |
| *Thalassiosira spp.* | 120 | | 520 | 20 | 180 | 80 | 80 |
| *Dictyocha speculum* | 40 | | | 20 | 20 | | |
| *Dinobryon spp.* | | | | | | | 80 |
| *Mesodinium rubrum* | 240 | 360 | 760 | | 20 | | 200 |
| Tintinnids | 40 | 80 | 80 | 20 | 40 | | |
| **20-May-97** | | | | | | | |
| *Alexandrium fundyense* | | | 20 | | | | |
| Armoured dinoflagellate | 40 | 100 | 20 | | 100 | | |
| *Ceratium longipes* | 40 | 20 | 20 | | | | |
| *Ceratium tripos* | | | | 40 | | | |
| *Dinophysis norvegica* | | | | | 100 | | |
| *Protoperidinium spp.* | 160 | 20 | | | | | |
| *Scrippsiella trochoidea* | | | | | | | 40 |
| Unarmoured dinoflagellate | | 20 | | | | | |
| *Asterionella spp.* | | | 20 | | | | |
| *Asterionellopsis glacialis* | | | | 80 | | 20 | 80 |
| *Asterionellopsis kariana* | | | | | | 20 | |
| *Cerataulina pelagica* | | | | | | | 40 |
| *Chaetoceros compressus* | | 40 | | 40 | 100 | | |
| *Chaetoceros debilis* | 440 | 100 | 20 | 1400 | 800 | 60 | 120 |
| *Chaetoceros decipiens* | | | 40 | | | | |
| *Chaetoceros furcellatus* | | 20 | | 240 | 900 | 60 | 80 |
| *Chaetoceros ingolfianus* | 120 | 20 | | | 100 | | 200 |
| *Chaetoceros laciniosus* | | | 20 | | | | |
| *Chaetoceros simplex* | 40 | | | | | | 120 |
| *Chaetoceros spp.* | 640 | 260 | 440 | 1840 | 2300 | 160 | 1000 |
| *Chaetoceros subtilis* | | 20 | 20 | | | | |
| *Coscinodiscus spp.* | 80 | 20 | | | | 20 | |
| *Cylindrotheca closterium* | 160 | | 20 | 200 | 200 | 140 | 80 |
| *Dactyliosolen fragilissimus* | | | | 80 | | | |
| *Ditylum brightwellii* | 40 | 20 | 40 | | 300 | 60 | |
| *Eucampia zodiacus* | | | | 80 | | | |
| *Guinardia delicatula* | | | | | | 20 | |
| *Leptocylindrus minimus* | 120 | 40 | 40 | 160 | 100 | | 40 |
| *Licmophora abbreviata* | 40 | | | | 100 | | |
| *Melosira ambigua* | | 20 | | | | | |
| *Navicula spp.* | 40 | | | | | 120 | |
| *Odontella aurita* | | | 20 | | | 20 | 40 |
| *Porosira glacialis* | | 40 | | 40 | | | 40 |
| *Pseudo-nitzschia delicatissima* group | 5520 | 3240 | 2640 | 7400 | 8500 | 460 | 160 |
| *Pseudo-nitzschia seriata* group | | | 20 | | | | |
| *Rhabdonema spp.* | | | 20 | | | | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **20-May-97 (continued)** | | | | | | | |
| *Skeletonema costatum* | 1480 | 1140 | 1160 | 1560 | 1600 | 360 | 40 |
| *Thalassionema nitzschioides* | | | | | | 40 | |
| *Thalassiosira auguste-lineata* | 40 | | 20 | 80 | | | |
| *Thalassiosira baltica* | | | | | | | 40 |
| *Thalassiosira decipiens* | 1760 | 540 | 460 | 5600 | 7600 | 500 | 3600 |
| *Thalassiosira gravida* | 80 | 20 | 40 | 480 | | 20 | 80 |
| *Thalassiosira nordenskioeldii* | 4840 | 2220 | 2540 | 25200 | 27100 | 540 | 7000 |
| *Thalassiosira spp.* | 120 | 360 | 240 | 240 | 400 | 160 | |
| Copepoda | 40 | | 20 | | | | |
| *Dictyocha speculum* | | 120 | 20 | | | | |
| *Mesodinium rubrum* | 120 | 20 | 20 | 40 | | | 80 |
| Tintinnids | 200 | 40 | 20 | | 100 | 20 | |
| **03-Jun-97** | | | | | | | |
| *Alexandrium fundyense* | 40 | 40 | | 40 | | | |
| Armoured dinoflagellate | 40 | 120 | 160 | | | | |
| *Ceratium horridum* | 40 | | 40 | | | | |
| *Ceratium longipes* | 40 | 120 | | | | | |
| *Dinophysis acuminata* | | | | 80 | | | |
| *Dinophysis acuta* | | | | 80 | | | |
| *Dinophysis spp.* | | 40 | | | | | |
| *Heterocapsa triquetra* | 40 | | | | | | |
| *Protoperidinium conicum* | | | | | | | 20 |
| *Protoperidinium ovatum* | | | | | | | 20 |
| *Protoperidinium spp.* | 120 | | 240 | 120 | | | |
| *Asterionellopsis glacialis* | 40 | 40 | | 120 | | 60 | |
| *Asterionellopsis kariana* | | 80 | 40 | | | 20 | |
| *Chaetoceros compressus* | 40 | 40 | 40 | | | | 80 |
| *Chaetoceros debilis* | 480 | 160 | 320 | 1320 | 320 | 180 | 420 |
| *Chaetoceros decipiens* | 80 | | | 40 | 120 | | 40 |
| *Chaetoceros furcellatus* | | | | 40 | 200 | 40 | 320 |
| *Chaetoceros ingolfianus* | 200 | | 40 | | | | 580 |
| *Chaetoceros laciniosus* | | 80 | 120 | 40 | | | |
| *Chaetoceros spp.* | 240 | 360 | 400 | 720 | 280 | 40 | 2540 |
| *Chaetoceros subtilis* | 40 | | | | | | 20 |
| *Chaetoceros teres* | | | | | | | 60 |
| *Corethron criophilum* | | 40 | | | | | |
| *Coscinodiscus spp.* | | | 40 | | | 20 | |
| *Dactyliosolen fragilissimus* | 80 | | 80 | | | | |
| *Ditylum brightwellii* | 280 | 320 | 200 | 240 | 240 | 60 | |
| *Eucampia zodiacus* | 240 | | 80 | 80 | | | 60 |
| *Guinardia delicatula* | 40 | | 80 | | | | |
| *Guinardia flaccida* | | | | 40 | | | |
| *Gyrosigma fasciola* | | | | | | 20 | |
| *Leptocylindrus danicus* | 80 | | 160 | 80 | | | 100 |
| *Leptocylindrus minimus* | 280 | 240 | 360 | 480 | 80 | | 620 |
| *Melosira spp.* | | | 120 | | | | 20 |
| *Navicula spp.* | | | | | 40 | 20 | 20 |
| *Paralia marina* | 40 | | | | | | |
| *Porosira glacialis* | 80 | 40 | 80 | | 40 | 20 | |
| *Pseudo-nitzschia delicatissima* group | 33400 | 76820 | 68470 | 68470 | 3800 | 720 | 880 |
| *Pseudo-nitzschia seriata* group | | | | | | | 20 |
| *Skeletonema costatum* | 1840 | 5200 | 1720 | 1960 | 2040 | 660 | |
| *Thalassionema nitzschioides* | 80 | | | | 40 | | |
| *Thalassiosira auguste-lineata* | 160 | | 80 | 240 | | 20 | 20 |
| *Thalassiosira baltica* | 40 | | 40 | | | 20 | 20 |
| *Thalassiosira decipiens* | 4840 | 3080 | 5120 | 10560 | 4800 | 1520 | 1000 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **03-Jun-97 (continued)** | | | | | | | |
| *Thalassiosira gravida* | 280 | 200 | 600 | 520 | 240 | 60 | 20 |
| *Thalassiosira nordenskioeldii* | 14040 | 8120 | 11680 | 16080 | 8360 | 840 | 180 |
| *Thalassiosira spp.* | 80 | 280 | 480 | | | | 40 |
| Copepoda | | | | 40 | | | |
| *Dictyocha speculum* | 80 | 40 | 160 | 40 | | | |
| *Mesodinium rubrum* | 40 | 560 | 720 | 160 | | | 280 |
| Tintinnids | 80 | 400 | 200 | 320 | | | 240 |
| **10-Jun-97** | | | | | | | |
| *Alexandrium fundyense* | 280 | 800 | 560 | 40 | 20 | | 80 |
| *Alexandrium fundyense* (duplet) | | 40 | 120 | | | | 40 |
| *Alexandrium fundyense* (triplet) | | 40 | | | | | |
| Armoured dinoflagellate | 400 | 240 | 240 | 40 | | | |
| *Ceratium horridum* | | | 200 | | | | |
| *Ceratium lineatum* | 40 | | | | | | |
| *Ceratium longipes* | | 120 | | | 20 | | |
| *Dinophysis acuta* | | | | 40 | 20 | | |
| *Dinophysis spp.* | | | 40 | | | | |
| *Heterocapsa triquetra* | 600 | 720 | 240 | 40 | | | |
| *Minuscula bipes* | 40 | | | | | | |
| *Protoperidinium denticulatum* | | | 80 | | | | |
| *Protoperidinium divergens* | | | | | 20 | | |
| *Protoperidinium spp.* | 40 | 160 | 40 | 40 | 60 | 20 | |
| *Scrippsiella trochoidea* | 120 | 40 | | 40 | | | |
| *Asterionellopsis glacialis* | 280 | 80 | 360 | 200 | 100 | 60 | |
| *Asterionellopsis kariana* | | | 40 | | | | |
| *Chaetoceros compressus* | 80 | 120 | 240 | 120 | 140 | | 40 |
| *Chaetoceros debilis* | 960 | 400 | 600 | 640 | 860 | 280 | 800 |
| *Chaetoceros decipiens* | | 240 | 200 | 120 | 80 | | 40 |
| *Chaetoceros diadema* | | | | | 140 | 20 | |
| *Chaetoceros furcellatus* | 40 | | 40 | | 20 | 40 | |
| *Chaetoceros ingolfianus* | 80 | | 40 | | 60 | 40 | |
| *Chaetoceros laciniosus* | 200 | 280 | 360 | 120 | 80 | | 40 |
| *Chaetoceros simplex* | | | | | | | 240 |
| *Chaetoceros spp.* | 400 | 280 | 1040 | 640 | 540 | 180 | 160 |
| *Chaetoceros subtilis* | | | | | 20 | | |
| *Chaetoceros teres* | | | | | | | 80 |
| *Coscinodiscus spp.* | | | | 40 | 20 | | |
| *Cylindrotheca closterium* | 160 | 120 | 120 | 560 | 300 | 340 | 560 |
| *Dactyliosolen fragilissimus* | | 40 | 200 | 40 | | | |
| *Ditylum brightwellii* | 80 | 160 | 120 | 80 | 160 | 20 | 80 |
| *Eucampia zodiacus* | 80 | | | 40 | | | |
| *Guinardia delicatula* | 280 | | | | | 20 | |
| *Leptocylindrus danicus* | | | 40 | | | | 120 |
| *Leptocylindrus minimus* | 400 | 80 | 280 | 520 | 320 | 100 | 2280 |
| *Licmophora abbreviata* | | | | 40 | | | |
| *Melosira ambigua* | | | | | 40 | | |
| *Navicula spp.* | 40 | 80 | | 120 | 40 | | |
| *Pleurosigma / Gyrosigma* | | | | | 20 | | |
| *Pleurosigma angulatum* | | 80 | 40 | | | | 120 |
| *Porosira glacialis* | | | 80 | | 20 | | |
| *Pseudo-nitzschia delicatissima* group | 30060 | 30060 | 58450 | 11400 | 60120 | 9200 | 4800 |
| *Pseudo-nitzschia seriata* group | | 160 | | | 20 | | |
| *Rhizosolenia hebetata* | | | | 40 | | | |
| *Rhizosolenia setigera* | | 40 | | | | | |
| *Skeletonema costatum* | 1160 | 1080 | 1760 | 4160 | 3920 | 2200 | 160 |
| *Thalassionema nitzschioides* | | 80 | | | 100 | 60 | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **10-Jun-97 (continued)** | | | | | | | |
| *Thalassiosira auguste-lineata* | 280 | | 40 | | 60 | 80 | 40 |
| *Thalassiosira baltica* | | | | 80 | | | |
| *Thalassiosira decipiens* | 3080 | 3000 | 5320 | 3800 | 6320 | 2840 | 2080 |
| *Thalassiosira gravida* | 120 | 80 | | 160 | 40 | 20 | 80 |
| *Thalassiosira nordenskioeldii* | 2280 | 600 | 920 | 360 | 220 | 180 | 40 |
| *Thalassiosira spp.* | 200 | | 40 | 40 | | 100 | |
| *Brachionus spp.* | 40 | 40 | | | | | |
| Copepoda | 40 | 120 | | 40 | 20 | | |
| *Dictyocha speculum* | 80 | | 120 | | 40 | | |
| *Favella spp.* | | 80 | | | | | |
| *Mesodinium rubrum* | 640 | 8360 | 2200 | 360 | 160 | | 1840 |
| *Parafavella spp.* | | | | | 40 | | |
| Tintinnids | | 120 | 160 | 280 | 60 | 80 | 320 |
| **17-Jun-97** | | | | | | | |
| *Alexandrium fundyense* | 680 | 560 | 2200 | | | | 80 |
| *Alexandrium fundyense* (duplet) | 80 | | 80 | | | | |
| Armoured dinoflagellate | 40 | | | 40 | | | 80 |
| *Ceratium horridum* | 80 | | 40 | | | | |
| *Ceratium spp.* | | 40 | | | | | |
| *Dinophysis acuminata* | | | | 40 | | | |
| *Dinophysis acuta* | | 40 | | | | | 40 |
| *Gymnodinium spp.* | | 40 | 80 | | | | |
| *Heterocapsa triquetra* | 280 | 200 | 560 | | | | |
| *Protoperidinium ovatum* | 40 | 40 | | | | | |
| *Protoperidinium spp.* | 240 | 200 | 280 | | | | 120 |
| *Scrippsiella trochoidea* | 40 | 200 | 160 | | | | |
| *Asterionellopsis glacialis* | 480 | 600 | 480 | 1520 | 300 | 80 | |
| *Cerataulina pelagica* | | | 40 | | | | 40 |
| *Chaetoceros compressus* | 760 | 1720 | 1680 | 2640 | 360 | 180 | 40 |
| *Chaetoceros constrictus* | | | | 80 | | | |
| *Chaetoceros debilis* | 3640 | 4320 | 4040 | 8840 | 600 | 100 | 1560 |
| *Chaetoceros decipiens* | 280 | 400 | 600 | 400 | 160 | 60 | 200 |
| *Chaetoceros diadema* | 40 | | | 160 | 80 | 40 | |
| *Chaetoceros furcellatus* | | | | 40 | | | 40 |
| *Chaetoceros ingolfianus* | 80 | 120 | 240 | 80 | 80 | 20 | |
| *Chaetoceros laciniosus* | 640 | 520 | 960 | 600 | 40 | 20 | |
| *Chaetoceros lorenzianus* | | | | 80 | | | |
| *Chaetoceros simplex* | | | | | 20 | | 80 |
| *Chaetoceros spp.* | 840 | 3560 | 2160 | 1000 | 200 | 180 | 480 |
| *Chaetoceros teres* | | | | | 20 | | 80 |
| *Coscinodiscus spp.* | | | 40 | | | | 40 |
| *Cylindrotheca closterium* | 520 | 440 | 1480 | 3680 | 720 | 220 | 1200 |
| *Dactyliosolen fragilissimus* | | 200 | 240 | 40 | | | 40 |
| *Ditylum brightwellii* | 200 | 120 | 160 | 160 | 80 | 80 | |
| *Eucampia zodiacus* | 200 | 120 | 80 | 120 | | | 80 |
| *Fragilaria spp.* | 80 | 40 | | | 20 | | |
| *Guinardia delicatula* | 120 | 120 | 160 | 360 | | | 120 |
| *Leptocylindrus danicus* | 120 | 240 | 400 | 360 | 60 | 20 | 440 |
| *Leptocylindrus minimus* | 520 | 520 | 800 | 720 | 580 | 60 | 9800 |
| *Licmophora abbreviata* | 240 | 120 | 280 | | | 20 | 120 |
| *Melosira spp.* | | | | | | | |
| *Navicula spp.* | 40 | | | 40 | 20 | | 40 |
| *Pleurosigma angulatum* | | | | 40 | | | |
| *Porosira glacialis* | | 40 | | 80 | 20 | | 40 |
| *Pseudo-nitzschia delicatissima* group | 7080 | 5640 | 2280 | 116900 | 2960 | 660 | 9160 |
| *Pseudo-nitzschia seriata* group | 80 | 40 | 200 | 160 | 100 | | 120 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **17-Jun-97 (continued)** | | | | | | | |
| *Rhabdonema spp.* | | 80 | 40 | | | | |
| *Rhizosolenia hebetata* | | | 40 | | 20 | | |
| *Skeletonema costatum* | 520 | 440 | 120 | 840 | 520 | 300 | |
| *Stephanopyxis turris* | | 40 | | | | | |
| *Thalassionema nitzschioides* | | | 160 | | 60 | 20 | 40 |
| *Thalassiosira auguste-lineata* | 120 | 40 | 80 | 80 | 100 | | |
| *Thalassiosira decipiens* | 2920 | 2720 | 2040 | 10000 | 2380 | 400 | 720 |
| *Thalassiosira gravida* | | 200 | | 40 | | | |
| *Thalassiosira nordenskioeldii* | 640 | 80 | 360 | 560 | 140 | 20 | |
| *Thalassiosira spp.* | 280 | | 160 | | 40 | 80 | 80 |
| *Brachionus spp.* | | | 40 | | | | |
| Copepoda | 40 | | | | | | 80 |
| *Dictyocha speculum* | | | 240 | | | 20 | |
| *Mesodinium rubrum* | 15840 | 6320 | 5800 | 40 | | | 1520 |
| *Parafavella spp.* | | | 80 | 40 | | | |
| *Ptychocylis spp.* | 40 | | | | | | |
| Tintinnids | 640 | 520 | 680 | 120 | 40 | | 520 |
| **24-Jun-97** | | | | | | | |
| *Alexandrium fundyense* | 480 | 8200 | 2280 | 120 | | | 80 |
| *Alexandrium fundyense* (duplet) | 80 | 400 | 80 | | | | |
| Armoured dinoflagellate | 160 | | 160 | 120 | | 40 | |
| *Ceratium fusus* | | | | | | | 80 |
| *Ceratium horridum* | 160 | | 160 | 80 | | | |
| *Ceratium lineatum* | | | | 40 | | | |
| *Ceratium longipes* | | 80 | | | | | |
| *Dinophysis acuminata* | 80 | | | 40 | | | |
| *Dinophysis acuta* | 80 | | | 80 | | | |
| *Dinophysis spp.* | | | 40 | | | | |
| *Heterocapsa triquetra* | 80 | 5320 | 480 | 40 | | | |
| *Protoperidinium denticulatum* | | | 40 | | | | |
| *Protoperidinium spp.* | | 200 | 120 | 200 | | | 80 |
| *Scrippsiella trochoidea* | | 1280 | 360 | | | | |
| *Asterionellopsis glacialis* | 880 | 240 | 840 | 600 | 380 | 520 | |
| *Chaetoceros compressus* | 6080 | 6320 | 4120 | 11280 | 1560 | 1120 | 160 |
| *Chaetoceros constrictus* | | 80 | | | 40 | | |
| *Chaetoceros debilis* | 3360 | 2280 | 1480 | 3240 | 680 | 320 | 160 |
| *Chaetoceros decipiens* | 560 | 720 | 480 | 720 | 40 | 160 | 40 |
| *Chaetoceros diadema* | | | | 40 | | | |
| *Chaetoceros ingolfianus* | 240 | 40 | 160 | 240 | 40 | 40 | |
| *Chaetoceros laciniosus* | 240 | 360 | 480 | 360 | 40 | | |
| *Chaetoceros lorenzianus* | | | | | | | 40 |
| *Chaetoceros spp.* | 1520 | 2960 | 2000 | 1600 | 1400 | 1640 | 200 |
| *Chaetoceros teres* | 160 | | | 80 | 40 | 40 | 40 |
| *Coscinodiscus spp.* | | 40 | 80 | 40 | | | 40 |
| *Cylindrotheca closterium* | 480 | 1120 | 800 | 2160 | 720 | 800 | 200 |
| *Dactyliosolen fragilissimus* | | | 240 | 80 | 20 | | 120 |
| *Detonula pumila* | | 80 | | | | | |
| *Ditylum brightwellii* | 80 | 80 | 200 | 160 | 60 | | |
| *Eucampia spp.* | 80 | | | | | | |
| *Eucampia zodiacus* | | | | 40 | | | |
| *Guinardia delicatula* | 320 | 120 | 40 | 120 | 40 | | 120 |
| *Guinardia flaccida* | | | | | | | 40 |
| *Leptocylindrus danicus* | 560 | 280 | 480 | 1000 | 80 | 120 | 1120 |
| *Leptocylindrus minimus* | 3840 | 320 | 680 | 1200 | 480 | 600 | 168670 |
| *Navicula spp.* | 240 | 40 | | | 60 | 80 | 80 |
| *Pleurosigma angulatum* | | | | | | | 80 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **24-Jun-97 (continued)** | | | | | | | |
| *Porosira glacialis* | | | | | | 40 | 40 |
| *Proboscia alata* | | | 40 | | | | |
| *Pseudo-nitzschia delicatissima* group | 1200 | 280 | 440 | 2480 | 660 | 720 | |
| *Pseudo-nitzschia seriata* group | 560 | 40 | 120 | 600 | 80 | | 40 |
| *Rhizosolenia hebetata* | | | 40 | | | | |
| *Skeletonema costatum* | 240 | 40 | 160 | 80 | 200 | 400 | |
| *Stephanopyxis turris* | | | | | 20 | | |
| *Thalassionema nitzschioides* | | | | | 140 | 40 | 40 |
| *Thalassiosira auguste-lineata* | 80 | 80 | 240 | 80 | 60 | 40 | |
| *Thalassiosira decipiens* | 240 | 440 | 720 | 520 | 120 | | |
| *Thalassiosira gravida* | | | 40 | | | | |
| *Thalassiosira nordenskioeldii* | 80 | 280 | 80 | 160 | 40 | 80 | 40 |
| *Thalassiosira spp.* | | | | 480 | 260 | 400 | |
| Copepoda | | 80 | | 80 | | | |
| *Dictyocha speculum* | | 160 | 400 | 120 | 20 | | |
| *Eutreptia / Eutreptiella* | | 200 | | | | | |
| *Helicostomella spp.* | | | | 40 | | | 40 |
| *Mesodinium rubrum* | 400 | | | 320 | | | 200 |
| *Parafavella spp.* | | | | 160 | | | |
| Tintinnids | 160 | 120 | 200 | 480 | 80 | 80 | 160 |
| **09-Jul-97** | | | | | | | |
| *Alexandrium fundyense* | 20 | | 40 | 80 | | | |
| *Amylax triacantha* | | | | | | | 40 |
| Armoured dinoflagellate | 80 | 20 | 40 | 40 | 20 | | |
| *Ceratium horridum* | | 120 | 180 | 20 | | | |
| *Ceratium lineatum* | 40 | | 20 | | | | 20 |
| *Ceratium longipes* | 20 | | | 80 | | | |
| *Ceratium tripos* | | | 40 | | | | |
| *Dinophysis acuminata* | 140 | 40 | 20 | 40 | | | 20 |
| *Dinophysis acuta* | 20 | | 100 | 20 | | | 20 |
| *Dinophysis spp.* | 20 | 20 | 60 | | 20 | | 20 |
| *Gonyaulax spinifera* | | 20 | | | | | |
| *Heterocapsa triquetra* | 20 | | 20 | 40 | | | |
| *Protoperidinium conicum* | 20 | | | | | | |
| *Protoperidinium spp.* | 80 | | 60 | 60 | 40 | | 80 |
| *Scrippsiella trochoidea* | | | | | | | 20 |
| *Asterionellopsis glacialis* | 20 | 40 | | 80 | 40 | 300 | |
| *Cerataulina pelagica* | 40 | | | | | | 1400 |
| *Chaetoceros compressus* | | | | | | | 20 |
| *Chaetoceros constrictus* | | | | | 20 | | |
| *Chaetoceros lorenzianus* | 20 | | | | | | |
| *Chaetoceros simplex* | | | | | | | 100 |
| *Chaetoceros spp.* | | | | | | | 60 |
| *Coscinodiscus spp.* | | | | | | 20 | |
| *Cylindrotheca closterium* | 100 | 60 | 80 | 500 | 140 | 380 | 75150 |
| *Dactyliosolen fragilissimus* | 60 | | | | | | 440 |
| *Ditylum brightwellii* | | | | 40 | 20 | | |
| *Eucampia zodiacus* | | | | | | | 60 |
| *Guinardia delicatula* | 740 | 20 | | 40 | | 20 | 41750 |
| *Leptocylindrus minimus* | | | 20 | 40 | 40 | 40 | 160 |
| *Licmophora abbreviata* | | | | | 20 | | |
| *Navicula spp.* | | | | 20 | | 80 | 20 |
| *Pleurosigma angulatum* | 40 | | | | | | 20 |
| *Pseudo-nitzschia delicatissima* group | 80 | | 40 | 20 | 20 | 60 | 25050 |
| *Pseudo-nitzschia seriata* group | | | | | 20 | 20 | 100 |
| *Rhizosolenia hebetata* | | | | | | | 40 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **09-Jul-97 (continued)** | | | | | | | |
| *Skeletonema costatum* | 20 | | | | | 220 | 1920 |
| *Thalassiosira decipiens* | | | | | | | 20 |
| *Thalassiosira spp.* | | | | | | | 20 |
| Copepoda | 20 | 80 | 20 | 20 | 20 | 20 | 20 |
| *Dictyocha speculum* | 100 | 80 | | 20 | 60 | | 80 |
| *Eutreptia / Eutreptiella* | 120 | | | | | | |
| *Helicostomella spp.* | 60 | | | | | | 80 |
| *Mesodinium rubrum* | 2120 | 1140 | 4100 | 1400 | 220 | | 1780 |
| Tintinnids | 280 | 140 | 440 | 700 | 320 | | 280 |
| **14-Jul-97** | | | | | | | |
| *Alexandrium fundyense* | | 20 | 100 | | | | |
| Armoured dinoflagellate | 120 | 180 | 140 | 120 | 20 | 20 | |
| *Ceratium horridum* | | 60 | 100 | | | | |
| *Ceratium lineatum* | | 20 | | | | | 40 |
| *Ceratium longipes* | 20 | | 60 | 20 | 20 | | |
| *Ceratium spp.* | | | | | | | 40 |
| *Dinophysis acuminata* | 40 | 40 | | 120 | 20 | | 120 |
| *Dinophysis acuta* | 40 | 20 | 20 | 80 | | | 40 |
| *Dinophysis norvegica* | | 20 | | | | | |
| *Dinophysis pulchella* | | 40 | | | | | |
| *Dinophysis spp.* | 140 | 40 | | 20 | | | 40 |
| *Heterocapsa triquetra* | 160 | 520 | 540 | | | | |
| *Protoperidinium spp.* | 40 | 20 | 120 | 40 | 60 | | 120 |
| *Scrippsiella trochoidea* | | | | | | | 80 |
| *Asterionellopsis glacialis* | 20 | | 20 | | 100 | 60 | |
| *Cerataulina pelagica* | 40 | | 20 | | | | 2080 |
| *Chaetoceros simplex* | | | | | | | 480 |
| *Chaetoceros spp.* | | 20 | | | | | 120 |
| *Corethron criophilum* | | | | | | | 40 |
| *Cylindrotheca closterium* | 280 | 380 | 720 | 1040 | 380 | 260 | 3960 |
| *Dactyliosolen fragilissimus* | | | | | | | 400 |
| *Ditylum brightwellii* | 20 | | | 20 | | | |
| *Guinardia delicatula* | 680 | 40 | 160 | 60 | | 20 | 53440 |
| *Leptocylindrus minimus* | | | | | | | 120 |
| *Licmophora abbreviata* | | 60 | | | | | |
| *Navicula spp.* | 20 | | 20 | | 60 | 40 | |
| *Paralia marina* | | | | | 20 | | |
| *Pleurosigma angulatum* | 20 | | 20 | | 20 | | 120 |
| *Pseudo-nitzschia delicatissima* group | 60 | 100 | 400 | 60 | | 40 | 5120 |
| *Rhizosolenia imbricata* | | | | | | | 40 |
| *Skeletonema costatum* | | 20 | 80 | 60 | 100 | 60 | 2120 |
| *Thalassionema nitzschioides* | | | | | | 20 | |
| *Thalassiosira spp.* | | | | | | | 40 |
| *Brachionus spp.* | | | | | | | 40 |
| Copepoda | 20 | 20 | 20 | 20 | | | |
| *Dictyocha speculum* | 80 | 260 | 520 | 100 | | | 200 |
| *Eutreptia / Eutreptiella* | 20 | 80 | 80 | | | | |
| *Helicostomella spp.* | | 20 | | | | | 120 |
| *Mesodinium rubrum* | 3320 | 2260 | 3120 | 800 | | | 1520 |
| *Notholca spp.* | | | | 20 | | | |
| Tintinnids | 340 | 540 | 1360 | 2160 | 20 | 60 | 5440 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **21-Jul-97** | | | | | | | |
| *Alexandrium fundyense* | | 80 | 60 | 80 | | | 120 |
| Armoured dinoflagellate | 100 | 220 | 20 | 100 | 20 | | 160 |
| *Ceratium arcticum* | | | | 40 | | | |
| *Ceratium horridum* | 20 | | | | | | |
| *Ceratium lineatum* | 40 | | 20 | 20 | | | |
| *Ceratium longipes* | 160 | 120 | 60 | 160 | 120 | | 20 |
| *Ceratium minutum* | | | | 20 | | | |
| *Dinophysis acuminata* | 40 | | 40 | 260 | 20 | | 180 |
| *Dinophysis acuta* | 20 | 20 | | 40 | | | |
| *Dinophysis norvegica* | 20 | | | 40 | | | |
| *Dinophysis spp.* | 20 | | | 20 | 80 | | 40 |
| *Heterocapsa triquetra* | 40 | 60 | | 20 | | | |
| *Protoperidinium ovatum* | | | | | | | 40 |
| *Protoperidinium spp.* | 120 | | | 60 | | | 60 |
| *Scrippsiella trochoidea* | 20 | 60 | | | | | |
| *Asterionellopsis glacialis* | 20 | | | | | 20 | |
| *Cerataulina pelagica* | | 20 | 40 | 60 | 20 | | 520 |
| *Chaetoceros furcellatus* | | | | | 20 | | |
| *Chaetoceros simplex* | 20 | | 60 | 20 | 100 | 20 | 940 |
| *Chaetoceros spp.* | 20 | | | | | | 100 |
| *Cylindrotheca closterium* | 540 | 60 | 80 | 160 | 480 | 200 | 940 |
| *Dactyliosolen fragilissimus* | | | 20 | 20 | | | 580 |
| *Ditylum brightwellii* | 20 | | | 20 | | | |
| *Guinardia delicatula* | 4920 | 460 | 8720 | 11720 | 10920 | 880 | 148630 |
| *Guinardia flaccida* | | | | | | | 60 |
| *Gyrosigma fasciola* | | | | 20 | | | |
| *Leptocylindrus minimus* | 40 | 60 | 20 | | 20 | | 660 |
| *Licmophora abbreviata* | 60 | 20 | | | | | |
| *Navicula spp.* | 80 | 60 | | | 20 | | 40 |
| *Paralia marina* | | | | | | 20 | |
| *Pleurosigma angulatum* | 40 | 40 | | 20 | | | 240 |
| *Pseudo-nitzschia delicatissima* group | 80 | 40 | 40 | 120 | 220 | 100 | 1620 |
| *Rhizosolenia setigera* | 20 | | | | | | |
| *Skeletonema costatum* | 60 | 20 | | 20 | | 40 | 140 |
| *Thalassiosira decipiens* | 40 | | | | | | |
| Copepoda | 20 | | | 40 | 20 | | 40 |
| *Dictyocha speculum* | 160 | 160 | 160 | 220 | 100 | | 240 |
| *Eutreptia / Eutreptiella* | 540 | 4260 | 160 | | | | |
| *Helicostomella spp.* | | | | | | | 40 |
| *Mesodinium rubrum* | 1480 | 300 | 320 | 1320 | 120 | | 1280 |
| Tintinnids | 880 | 240 | 160 | 1480 | 1020 | 220 | 840 |
| **29-Jul-97** | | | | | | | |
| *Alexandrium fundyense* | 20 | 100 | | | | | 60 |
| Armoured dinoflagellate | 40 | 780 | | | | | 160 |
| *Ceratium horridum* | | 60 | | | | | |
| *Ceratium lineatum* | 40 | 160 | | | | | 20 |
| *Ceratium longipes* | 200 | 160 | | | | | 80 |
| *Ceratium spp.* | 20 | 20 | | | | | |
| *Ceratium tripos* | | 60 | | | | | |
| *Dinophysis acuminata* | 120 | 240 | | | | | 60 |
| *Dinophysis acuta* | 20 | 120 | | | | | |
| *Dinophysis norvegica* | 20 | | | | | | 60 |
| *Dinophysis pulchella* | | 80 | | | | | |
| *Dinophysis spp.* | | 60 | | | | | 20 |
| *Heterocapsa triquetra* | 260 | 1660 | | | | | 20 |
| *Protoperidinium ovatum* | | | | | | | 40 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **29-Jul-97 (continued)** | | | | | | | |
| *Protoperidinium spp.* | 80 | 100 | | | | | 20 |
| Unarmoured dinoflagellate | 20 | | | | | | 140 |
| *Achnanthes spp.* | | 20 | | | | | |
| *Asterionellopsis glacialis* | 20 | 20 | | | | | |
| *Cerataulina pelagica* | 20 | | | | | | |
| *Chaetoceros debilis* | 20 | | | | | | |
| *Chaetoceros simplex* | 120 | 40 | | | | | 60 |
| *Chaetoceros spp.* | 40 | 20 | | | | | 20 |
| *Corethron criophilum* | 20 | 20 | | | | | |
| *Cylindrotheca closterium* | 860 | 980 | | | | | 60 |
| *Dactyliosolen fragilissimus* | | | | | | | 20 |
| *Ditylum brightwellii* | 40 | | | | | | |
| *Guinardia delicatula* | 6600 | 8000 | | | | | |
| *Lauderia annulata* | | | | | | | 20 |
| *Leptocylindrus danicus* | 20 | | | | | | |
| *Leptocylindrus minimus* | 40 | 200 | | | | | |
| *Licmophora abbreviata* | 40 | 40 | | | | | 40 |
| *Navicula spp.* | | | | | | | 20 |
| *Pleurosigma angulatum* | | | | | | | 80 |
| *Pseudo-nitzschia delicatissima* group | 500 | 800 | | | | | |
| *Rhizosolenia setigera* | 20 | | | | | | |
| *Skeletonema costatum* | 140 | 420 | | | | | |
| Copepoda | 60 | 120 | | | | | 80 |
| *Dictyocha speculum* | 440 | 960 | | | | | 1180 |
| *Eutreptia / Eutreptiella* | 120 | 40 | | | | | 800 |
| *Helicostomella spp.* | | | | | | | 80 |
| *Mesodinium rubrum* | 3660 | 23760 | | | | | 12260 |
| Tintinnids | 1000 | 800 | | | | | 740 |
| **05-Aug-97** | | | | | | | |
| *Alexandrium fundyense* | 160 | 140 | 300 | | | | 80 |
| *Amylax triacantha* | | | | | | | 20 |
| Armoured dinoflagellate | 160 | 300 | 840 | 60 | 20 | 20 | 60 |
| *Ceratium fusus* | | | | 20 | | | |
| *Ceratium lineatum* | 20 | 40 | 120 | | | | |
| *Ceratium longipes* | 100 | 300 | 300 | 140 | 240 | | 200 |
| *Ceratium spp.* | 20 | | 20 | | | | |
| *Ceratium tripos* | | 20 | 40 | 40 | 20 | | |
| *Dinophysis acuminata* | 200 | 160 | 260 | 20 | 20 | | |
| *Dinophysis acuta* | 20 | | 60 | | | | |
| *Dinophysis norvegica* | 40 | 20 | 100 | 40 | 20 | | 80 |
| *Dinophysis spp.* | | 20 | | | | | |
| *Gonyaulax digitale* | | 20 | 40 | | | | |
| *Heterocapsa triquetra* | 2500 | 4040 | 17240 | 160 | | | |
| *Protoperidinium divergens* | | | | | | | 20 |
| *Protoperidinium spp.* | 20 | 60 | 100 | 40 | | | 20 |
| *Scrippsiella trochoidea* | 140 | 160 | 60 | | | | 80 |
| Unarmoured dinoflagellate | 180 | 340 | 540 | 40 | | | 40 |
| *Actinoptychus senarius* | 20 | | | 40 | | | |
| *Asterionellopsis glacialis* | 40 | | | 60 | 80 | 220 | |
| *Cerataulina pelagica* | 380 | | | | | | 20 |
| *Chaetoceros compressus* | | | 20 | 20 | | | |
| *Chaetoceros simplex* | 100 | 60 | | | | | 60 |
| *Chaetoceros spp.* | 80 | 40 | 20 | 20 | | 20 | 80 |
| *Chaetoceros subtilis* | | | 20 | 20 | | | |
| *Corethron criophilum* | 40 | 20 | | | 20 | 20 | |
| *Cylindrotheca closterium* | 860 | 260 | 100 | 160 | 380 | 60 | 260 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **05-Aug-97 (continued)** | | | | | | | |
| *Dactyliosolen fragilissimus* | | | 80 | | | 20 | 20 |
| *Ditylum brightwellii* | | | 40 | 20 | 20 | 40 | |
| *Guinardia delicatula* | 2780 | 2040 | 980 | 960 | 2500 | 240 | |
| *Leptocylindrus danicus* | 20 | | | | | | |
| *Leptocylindrus minimus* | 40 | 40 | | | | | |
| *Licmophora abbreviata* | 20 | 20 | 20 | | | | 60 |
| *Navicula spp.* | 40 | | | | | 40 | 40 |
| *Pleurosigma / Gyrosigma* | | | | | | | 20 |
| *Pleurosigma angulatum* | 180 | 20 | | | | 20 | 300 |
| *Pseudo-nitzschia delicatissima* group | 440 | 260 | 120 | 100 | 300 | 280 | |
| *Rhizosolenia hebetata* | | 80 | | | | | |
| *Rhizosolenia setigera* | | 20 | | 80 | | | |
| *Skeletonema costatum* | 220 | 140 | 300 | 480 | 160 | 200 | |
| *Thalassiosira oestrupii* | | | | | | 60 | |
| *Thalassiosira spp.* | | | 40 | 60 | 20 | | |
| Copepoda | 40 | 20 | 20 | 20 | 60 | 20 | 40 |
| *Dictyocha speculum* | 620 | 980 | 1800 | 460 | 200 | | 1340 |
| *Eutreptia / Eutreptiella* | 120 | 220 | 380 | | | | 600 |
| *Helicostomella spp.* | | | | | | | 80 |
| *Mesodinium rubrum* | 3620 | 3560 | 2200 | 240 | 140 | | 1520 |
| Tintinnids | 1220 | 640 | 4260 | 320 | 100 | 20 | 460 |
| **10-Aug-97** | | | | | | | |
| *Alexandrium fundyense* | 120 | 200 | 260 | | | | |
| Armoured dinoflagellate | 420 | 5000 | 2080 | 120 | 20 | | 20 |
| *Ceratium fusus* | 40 | | 20 | | | | |
| *Ceratium horridum* | | 40 | | 20 | | | |
| *Ceratium lineatum* | 140 | 120 | 120 | | | | 80 |
| *Ceratium longipes* | 200 | 280 | 260 | 260 | 20 | | 40 |
| *Ceratium spp.* | 80 | 80 | 40 | 100 | | | 40 |
| *Ceratium tripos* | 60 | 40 | 60 | 20 | 20 | | |
| *Dinophysis acuminata* | 120 | 600 | 40 | 40 | 20 | | |
| *Dinophysis acuta* | | 120 | 40 | | | | |
| *Dinophysis norvegica* | 80 | 80 | 20 | | | | |
| *Dinophysis pulchella* | | | | | 20 | | 20 |
| *Dinophysis spp.* | 20 | 80 | 20 | | | | |
| *Gonyaulax digitale* | | 40 | 40 | | | | |
| *Gonyaulax spinifera* | 160 | 160 | 120 | | | | |
| *Heterocapsa triquetra* | 540 | 13840 | 1880 | 20 | | | |
| *Protoperidinium brevipes* | | | | | | | 20 |
| *Protoperidinium depressum* | 20 | | | 20 | | | |
| *Protoperidinium leonis* | | | 20 | | | | |
| *Protoperidinium spp.* | 20 | 80 | | | | | |
| *Scrippsiella trochoidea* | 260 | 520 | 260 | | | | 20 |
| Unarmoured dinoflagellate | 100 | 280 | 140 | 40 | | | |
| *Asterionellopsis glacialis* | | | | | 20 | 60 | |
| *Cerataulina pelagica* | 400 | 40 | 20 | | | | |
| *Chaetoceros compressus* | 20 | | | | | | |
| *Chaetoceros constrictus* | 160 | | | 20 | | | 580 |
| *Chaetoceros debilis* | 20 | | | | | | |
| *Chaetoceros ingolfianus* | 60 | | | | | | |
| *Chaetoceros simplex* | 40 | | 20 | | | | 80 |
| *Chaetoceros socialis* | 60 | | | | | | |
| *Chaetoceros spp.* | 540 | | | 20 | | 40 | 140 |
| *Corethron criophilum* | 20 | | | 20 | | | |
| *Coscinodiscus spp.* | 20 | | | | | | |
| *Cylindrotheca closterium* | 280 | | 100 | 40 | 120 | 260 | 240 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **10-Aug-97 (continued)** | | | | | | | |
| *Dactyliosolen fragilissimus* | | | | | | | 60 |
| *Ditylum brightwellii* | | | 40 | | | | |
| *Guinardia delicatula* | 7160 | 35070 | 13200 | 8880 | 1660 | 2260 | 80 |
| *Guinardia flaccida* | | | | | | | 120 |
| *Leptocylindrus minimus* | 60 | | | | | | |
| *Melosira ambigua* | | 160 | | | | | |
| *Pleurosigma angulatum* | 20 | | | | 20 | | |
| *Pseudo-nitzschia delicatissima* group | 20 | 40 | | 60 | 140 | 60 | |
| *Rhabdonema spp.* | | | | | | | 20 |
| *Rhizosolenia imbricata* | | | 20 | | | | |
| *Rhizosolenia setigera* | | 40 | | | | | |
| *Skeletonema costatum* | 40 | | 40 | 20 | 20 | 220 | 220 |
| *Thalassiosira oestrupii* | | | | 20 | | | |
| *Thalassiosira spp.* | 60 | | | | | | |
| Copepoda | 40 | | | 20 | 20 | | |
| *Dictyocha speculum* | 500 | 480 | 840 | 400 | 120 | | 1980 |
| *Eutreptia / Eutreptiella* | | 40 | | | | | 60 |
| *Helicostomella spp.* | | 40 | | | | | 100 |
| *Mesodinium rubrum* | 1480 | 400 | 620 | 260 | | | 200 |
| *Notholca spp.* | | | | | | | 20 |
| Tintinnids | 400 | 440 | 340 | 600 | 220 | 60 | 300 |
| **19-Aug-97** | | | | | | | |
| *Alexandrium fundyense* | 60 | 160 | | 100 | | | 160 |
| *Amylax triacantha* | | | | | | | 40 |
| Armoured dinoflagellate | 80 | 2440 | 4120 | 300 | 80 | | 120 |
| *Ceratium arcticum* | | | | 20 | | | |
| *Ceratium fusus* | 60 | 80 | | 40 | 20 | | |
| *Ceratium horridum* | | 40 | | | | | |
| *Ceratium lineatum* | 100 | 440 | 80 | 40 | 60 | | 200 |
| *Ceratium longipes* | 260 | 280 | 440 | 140 | 40 | | 160 |
| *Ceratium spp.* | | 40 | 40 | | 20 | | |
| *Ceratium tripos* | 100 | 80 | 40 | 60 | | | 80 |
| *Dinophysis acuminata* | 40 | 120 | 80 | | | | 40 |
| *Dinophysis acuta* | | | | 40 | | | |
| *Dinophysis norvegica* | 40 | 40 | | 20 | | | 40 |
| *Dinophysis spp.* | 80 | 40 | | | | | |
| *Gonyaulax digitale* | | 200 | | | | | |
| *Heterocapsa triquetra* | 120 | 6040 | 8600 | 20 | | | |
| *Phalacroma rotundatum* | | 40 | | | | | |
| *Prorocentrum micans* | | | 40 | | | | |
| *Protoperidinium depressum* | 20 | | | | | | |
| *Protoperidinium ovatum* | | 40 | | | | | |
| *Protoperidinium spp.* | 40 | 320 | 80 | | | | 120 |
| *Scrippsiella trochoidea* | 260 | 1880 | 320 | 40 | | | 920 |
| Unarmoured dinoflagellate | 80 | 360 | 400 | 180 | 140 | | |
| *Actinoptychus senarius* | | | | | | 60 | |
| *Asterionellopsis glacialis* | | | | 40 | 60 | 140 | |
| *Cerataulina pelagica* | 340 | 40 | 240 | 20 | 20 | | 280 |
| *Chaetoceros constrictus* | 80 | 40 | | 40 | 20 | 20 | 80 |
| *Chaetoceros debilis* | 200 | | | | | | |
| *Chaetoceros simplex* | 20 | | 40 | | 60 | | 1080 |
| *Chaetoceros socialis* | 40 | | | | | | |
| *Chaetoceros spp.* | 260 | 80 | 120 | 20 | 40 | 20 | 240 |
| *Chaetoceros subtilis* | 40 | | 40 | | 20 | | |
| *Corethron criophilum* | | 80 | 120 | 20 | 80 | 80 | 120 |
| *Coscinodiscus spp.* | | | | 20 | | | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **19-Aug-97 (continued)** | | | | | | | |
| *Cylindrotheca closterium* | 220 | 360 | 160 | 780 | 200 | 140 | 5440 |
| *Ducyliosolen fragilissimus* | 40 | | | | 20 | 20 | |
| *Dityium brightwellii* | 640 | 800 | 840 | 600 | 320 | 140 | 40 |
| *Guinardia delicatula* | 1020 | 1320 | 3600 | 1000 | 500 | 360 | 600 |
| *Guinardia flaccida* | | | 240 | 60 | 20 | | 320 |
| *Leptocylindrus mediterraneus* | | | 40 | | | 20 | |
| *Leptocylindrus minimus* | 280 | 360 | 560 | 320 | 20 | 100 | 40 |
| *Navicula spp.* | | | 40 | | 20 | | |
| *Pleurosigma / Gyrosigma* | 20 | | | | | | |
| *Pleurosigma angulatum* | 60 | | | 60 | | | 200 |
| *Pleurosigma angulatum* var. *strigosa* | | | 40 | | | | |
| *Pseudo-nitzschia delicatissima* group | 80 | 120 | 640 | 300 | 20 | 320 | |
| *Pseudo-nitzschia seriata* group | 40 | 360 | | | | 80 | 160 |
| *Rhizosolenia hebetata* | | | | | | | 80 |
| *Rhizosolenia imbricata* | | | | | | | 40 |
| *Rhizosolenia setigera* | 60 | | 80 | 60 | 20 | 20 | |
| *Rhizosolenia spp.* | | | | | | | 40 |
| *Skeletonema costatum* | 120 | 80 | 400 | 220 | 380 | 160 | 7360 |
| *Thalassionema nitzschioides* | | | | | | 40 | |
| *Thalassiosira spp.* | 40 | | 80 | 140 | | | |
| Copepoda | 80 | | | 60 | | | |
| *Dictyocha speculum* | 320 | 3120 | 6520 | 540 | 640 | 80 | 440 |
| *Eutreptia / Eutreptiella* | 20 | 80 | | | | | |
| *Helicostomella spp.* | | 120 | | | | | 160 |
| *Mesodinium rubrum* | 200 | 3960 | 1440 | 200 | 20 | | 920 |
| *Notholca spp.* | | 40 | | | | | |
| Tintinnids | 200 | 80 | 240 | 120 | 160 | 60 | 600 |
| **26-Aug-97** | | | | | | | |
| *Alexandrium fundyense* | 280 | 80 | 1080 | 520 | | 20 | 160 |
| *Alexandrium fundyense* (duplet) | | | 40 | | | | |
| Armoured dinoflagellate | 3480 | 340 | 9560 | 2560 | | 20 | 5760 |
| *Ceratium fusus* | 40 | 40 | | 20 | 20 | | |
| *Ceratium horridum* | 40 | | 40 | 40 | | | |
| *Ceratium lineatum* | 120 | 40 | 120 | 20 | 20 | | 880 |
| *Ceratium longipes* | | 20 | | 60 | | | 40 |
| *Ceratium spp.* | 40 | | | | | | |
| *Ceratium tripos* | | 40 | | | 20 | | |
| *Dinophysis acuminata* | 160 | | 80 | 20 | | | |
| *Dinophysis acuta* | | | | 20 | | | |
| *Dinophysis norvegica* | 40 | | | | | | |
| *Dinophysis spp.* | | 20 | 160 | | | | |
| *Gonyaulax digitale* | 40 | | 40 | 20 | | | |
| *Gonyaulax spinifera* | 160 | 20 | 280 | | | | |
| *Heterocapsa triquetra* | 520 | 20 | 10440 | 160 | | | 40 |
| *Phalacroma rotundatum* | | | 80 | | | | |
| *Protoperidinium spp.* | 160 | | | | | | |
| *Scrippsiella trochoidea* | 640 | 60 | 960 | 80 | | | 280 |
| Unarmoured dinoflagellate | 120 | | 360 | 80 | | 20 | 200 |
| *Asterionellopsis glacialis* | | 80 | | 60 | 140 | 100 | |
| *Cerataulina pelagica* | 1360 | 60 | | | | | |
| *Chaetoceros constrictus* | 80 | | | | | | |
| *Chaetoceros debilis* | 320 | | | | | 40 | 40 |
| *Chaetoceros simplex* | 160 | 60 | | 20 | 20 | | 600 |
| *Chaetoceros socialis* | 240 | 120 | | | | | 40 |
| *Chaetoceros spp.* | 320 | | | | | | |
| *Chaetoceros subtilis* | | 20 | | 20 | | 20 | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **26-Aug-97 (continued)** | | | | | | | |
| *Corethron criophilum* | 80 | 20 | 40 | 60 | 40 | 20 | 40 |
| *Coscinodiscus spp.* | | | 40 | | | | 40 |
| *Cylindrotheca closterium* | 1040 | 340 | 600 | 620 | 920 | 320 | 680 |
| *Dactyliosolen fragilissimus* | 80 | | | | | | 40 |
| *Ditylum brightwellii* | 200 | 20 | 40 | 20 | 80 | 80 | |
| *Guinardia delicatula* | 240 | 80 | 80 | 60 | 60 | 60 | 480 |
| *Guinardia flaccida* | 320 | | | | | | 400 |
| *Leptocylindrus minimus* | 160 | 80 | | 120 | 140 | 40 | |
| *Navicula spp.* | | | | | 40 | | |
| *Paralia marina* | | | | | 20 | | |
| *Pleurosigma angulatum* | 40 | | | | | | |
| *Pseudo-nitzschia delicatissima* group | 160 | 380 | 840 | 1180 | 1440 | 2180 | |
| *Pseudo-nitzschia seriata* group | | | | | 40 | | |
| *Rhizosolenia imbricata* | | | | | | | 80 |
| *Skeletonema costatum* | 240 | 60 | | 140 | 120 | 120 | 4200 |
| *Thalassionema nitzschioides* | | | | | 40 | | |
| *Thalassiosira spp.* | | 40 | | 80 | 60 | | |
| Copepoda | 40 | 100 | | 20 | | | 40 |
| *Dictyocha speculum* | 880 | 220 | 1240 | 740 | 80 | 40 | 1720 |
| *Eutreptia / Eutreptiella* | 80 | | 120 | | | | 40 |
| *Helicostomella spp.* | 40 | 40 | | | | | |
| *Mesodinium rubrum* | 1480 | 280 | 360 | 120 | | | 3640 |
| Tintinnids | 200 | 120 | 200 | 20 | 20 | 40 | 240 |
| **03-Sep-97** | | | | | | | |
| *Alexandrium fundyense* | 160 | 240 | 560 | 80 | | | |
| Armoured dinoflagellate | 960 | 3020 | 2480 | 1040 | | | 180 |
| *Ceratium fusus* | 80 | | 120 | 80 | 40 | | |
| *Ceratium horridum* | | 160 | | | | | |
| *Ceratium lineatum* | 80 | 120 | 80 | 440 | 80 | | 680 |
| *Ceratium longipes* | | 280 | 160 | 240 | 120 | 20 | 20 |
| *Ceratium spp.* | | 120 | | 40 | | | |
| *Ceratium tripos* | 40 | | 80 | 40 | | | |
| *Dinophysis acuminata* | 80 | 480 | 160 | 80 | | | 20 |
| *Dinophysis acuta* | | | 40 | | | | |
| *Dinophysis norvegica* | | 120 | | 40 | | | |
| *Dinophysis spp.* | 40 | | 240 | 40 | | | 20 |
| *Gonyaulax digitale* | | | | 40 | | | |
| *Gonyaulax spinifera* | | 40 | | | | | |
| *Heterocapsa triquetra* | | 1080 | 360 | | 40 | | |
| *Phalacroma rotundatum* | 80 | | | | | | |
| *Prorocentrum micans* | 160 | 40 | 40 | | | | |
| *Protoperidinium divergens* | | | | | | 20 | |
| *Protoperidinium leonis* | 40 | | | | | | |
| *Protoperidinium ovatum* | 40 | 40 | | | | | |
| *Protoperidinium spp.* | 160 | 440 | 160 | | | | 60 |
| *Scrippsiella trochoidea* | 280 | 2880 | 1040 | | 80 | | 60 |
| Unarmoured dinoflagellate | | 1900 | 80 | | | | |
| *Actinoptychus senarius* | | | | | | 80 | |
| *Asterionellopsis glacialis* | 18370 | 33400 | 68470 | 46760 | 18000 | 1960 | |
| *Cerataulina pelagica* | 600 | 120 | 240 | 40 | | | 340 |
| *Chaetoceros compressus* | 240 | 400 | 440 | 360 | 240 | 20 | |
| *Chaetoceros debilis* | 2080 | 240 | 160 | | 40 | | |
| *Chaetoceros decipiens* | 200 | | 160 | 200 | | | |
| *Chaetoceros lorenzianus* | | | | | 40 | | |
| *Chaetoceros simplex* | | | | | | 40 | 200 |
| *Chaetoceros socialis* | 120 | | | | | | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **03-Sep-97 (continued)** | | | | | | | |
| *Chaetoceros spp.* | 440 | 360 | 360 | 480 | 80 | 40 | 60 |
| *Chaetoceros subtilis* | 120 | | | | | | |
| *Chaetoceros teres* | 40 | 80 | | | | | |
| *Corethron criophilum* | | | 40 | 40 | 40 | | 100 |
| *Cylindrotheca closterium* | 40 | 200 | 400 | 240 | 80 | 240 | 120 |
| *Dactyliosolen fragilissimus* | 200 | 240 | 160 | 320 | 200 | | 60 |
| *Ditylum brightwellii* | 9360 | 18370 | 10200 | 5840 | 3360 | 200 | 20 |
| *Grammatophora marina* | | | | | | 20 | |
| *Guinardia delicatula* | 440 | 40 | 240 | 400 | 200 | 100 | 2280 |
| *Guinardia flaccida* | | | 40 | | 120 | 100 | 1480 |
| *Guinardia striata* | 320 | | 280 | | 80 | | |
| *Leptocylindrus danicus* | | | | | | 20 | |
| *Leptocylindrus minimus* | 1000 | 600 | 840 | 1480 | 1160 | 160 | 40 |
| *Licmophora abbreviata* | 40 | | | | | | |
| *Navicula spp.* | | | | | | | 20 |
| *Paralia marina* | 40 | | | | | | |
| *Pleurosigma angulatum* | 160 | | | | | | 60 |
| *Pleurosigma angulatum* var. *strigosa* | | | | 40 | 40 | | |
| *Pseudo-nitzschia delicatissima* group | 23380 | 18370 | 18370 | 4280 | 1800 | 1240 | 60 |
| *Pseudo-nitzschia seriata* group | 80 | 200 | 840 | 400 | 400 | 40 | 160 |
| *Rhizosolenia imbricata* | | | | | | | 100 |
| *Rhizosolenia setigera* | | | | | | | 20 |
| *Skeletonema costatum* | 73480 | 223780 | 90180 | 45090 | 12800 | 1960 | 720 |
| *Thalassionema nitzschioides* | | | 80 | | | | |
| *Thalassiosira auguste-lineata* | 40 | 80 | 40 | 40 | 40 | | |
| *Thalassiosira decipiens* | 40 | | 80 | | | | |
| *Thalassiosira oestrupii* | | | | 80 | 240 | | |
| *Thalassiosira spp.* | 240 | 320 | 400 | 400 | 160 | 40 | 20 |
| Copepoda | 40 | 40 | 40 | | 40 | 20 | 20 |
| *Dictyocha speculum* | 40 | 80 | 160 | 280 | 480 | 40 | 220 |
| *Favella spp.* | 40 | 40 | | | | | |
| *Helicostomella spp.* | | 40 | | | | | 20 |
| *Mesodinium rubrum* | 520 | 1800 | 2440 | | 40 | 20 | 1380 |
| Tintinnids | 440 | 160 | 760 | 600 | 360 | 20 | 200 |
| **15-Sep-97** | | | | | | | |
| *Alexandrium fundyense* | | 120 | | | | | |
| Armoured dinoflagellate | 840 | 1880 | 580 | 180 | 40 | | 40 |
| *Ceratium fusus* | 80 | 40 | | 60 | 20 | | 20 |
| *Ceratium lineatum* | 1120 | 1480 | 580 | 240 | 200 | 20 | 2120 |
| *Ceratium longipes* | 40 | 240 | 100 | 80 | 40 | | 20 |
| *Ceratium minutum* | | | | | | | 60 |
| *Ceratium tripos* | | 160 | | | 20 | | 40 |
| *Dinophysis acuminata* | 80 | 520 | 140 | 60 | | 20 | |
| *Dinophysis acuta* | | | 20 | | | | |
| *Dinophysis norvegica* | 160 | 40 | 20 | | 20 | | |
| *Dinophysis spp.* | 160 | | | | | | |
| *Gonyaulax digitale* | 80 | | | | | | |
| *Heterocapsa triquetra* | 160 | 1840 | 460 | | | | 20 |
| *Phalacroma rotundatum* | 40 | 80 | 20 | | | | |
| *Prorocentrum micans* | | 40 | 40 | | | | 60 |
| *Protoperidinium depressum* | | 40 | | | | | |
| *Protoperidinium excentricum* | 40 | | | | | | |
| *Protoperidinium spp.* | 80 | 160 | 60 | | 20 | | 20 |
| *Scrippsiella trochoidea* | 360 | 480 | 440 | | | | 20 |
| Unarmoured dinoflagellate | 80 | 560 | 100 | | 20 | | |
| *Actinoptychus senarius* | | | | 20 | 300 | | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **15-Sep-97 (continued)** | | | | | | | |
| *Asterionellopsis glacialis* | 5320 | 3320 | 5420 | 7480 | 3760 | 600 | 20 |
| *Asterionellopsis kariana* | | | | | 20 | | |
| *Cerataulina pelagica* | 40 | 200 | 40 | 20 | 100 | 20 | 1600 |
| *Chaetoceros compressus* | 800 | 600 | 400 | 380 | 680 | | |
| *Chaetoceros constrictus* | 200 | 40 | 80 | | 20 | | |
| *Chaetoceros debilis* | 2000 | 600 | 620 | 160 | 300 | 20 | 160 |
| *Chaetoceros decipiens* | 80 | 80 | 80 | 120 | 40 | 20 | |
| *Chaetoceros ingolfianus* | | 40 | 40 | | | | |
| *Chaetoceros laciniosus* | 80 | | 20 | | 20 | | |
| *Chaetoceros lorenzianus* | | | | | | | 20 |
| *Chaetoceros simplex* | | | 20 | | 20 | | 140 |
| *Chaetoceros socialis* | 40 | | | 20 | | | |
| *Chaetoceros spp.* | 1600 | 880 | 580 | 520 | 460 | 60 | |
| *Chaetoceros teres* | 40 | 40 | | 20 | | | |
| *Corethron criophilum* | | | | 40 | 20 | | 40 |
| *Cyclotella spp.* | 40 | | | | | | |
| *Cylindrotheca closterium* | 160 | 80 | 320 | 340 | 500 | 100 | 100 |
| *Dactyliosolen fragilissimus* | | | | 20 | 20 | | |
| *Ditylum brightwellii* | 12760 | 5560 | 3300 | 3120 | 2640 | 520 | 320 |
| *Eucampia zodiacus* | | | | | | | 20 |
| *Guinardia delicatula* | 200 | 160 | 200 | 200 | 240 | 120 | 1480 |
| *Guinardia flaccida* | 80 | 280 | 80 | 520 | 260 | | 440 |
| *Guinardia striata* | 640 | 320 | 100 | 1020 | 200 | | 20 |
| *Gyrosigma fasciola* | | | | | | | 20 |
| *Leptocylindrus danicus* | 80 | | | 40 | | | 40 |
| *Leptocylindrus minimus* | 80 | 80 | 120 | 200 | 40 | 20 | 180 |
| *Pleurosigma / Gyrosigma* | | | | | | | 20 |
| *Pleurosigma angulatum* var. *strigosa* | | | 40 | | 20 | 20 | |
| *Pseudo-nitzschia delicatissima* group | 240 | 240 | 560 | 500 | 320 | 120 | 60 |
| *Pseudo-nitzschia seriata* group | 120 | 360 | 200 | | 40 | 40 | 80 |
| *Pseudo-nitzschia spp.* | | | | 40 | | | |
| *Rhizosolenia imbricata* | | | | | | | 80 |
| *Skeletonema costatum* | 1600 | 3080 | 2060 | 980 | 600 | 760 | 100 |
| *Thalassionema nitzschioides* | | | 40 | 20 | 20 | | |
| *Thalassiosira auguste-lineata* | 40 | 40 | | | | | |
| *Thalassiosira baltica* | | | 20 | | | | |
| *Thalassiosira oestrupii* | 80 | 40 | | 40 | 40 | | |
| *Thalassiosira spp.* | | 240 | 140 | 100 | | | |
| Copepods | 40 | 120 | 20 | 40 | | | 20 |
| *Dictyocha speculum* | 40 | 40 | 60 | 240 | 40 | 20 | 180 |
| *Eutreptia / Eutreptiella* | 40 | | | | | | |
| *Helicostomella spp.* | 40 | 40 | | | | | |
| *Mesodinium rubrum* | 2200 | 1520 | 2680 | 80 | 20 | 20 | 4960 |
| Tintinnids | 240 | 320 | 120 | 140 | 80 | 20 | 320 |
| **01-Oct-97** | | | | | | | |
| *Alexandrium fundyense* | 40 | 40 | | | | 20 | |
| *Amylax triacantha* | | | | 40 | | | |
| Armoured dinoflagellate | 40 | 560 | 320 | 120 | 20 | | 100 |
| *Ceratium fusus* | 40 | 40 | | | 20 | | 20 |
| *Ceratium kofoidii* | | | | 40 | | | |
| *Ceratium lineatum* | 1200 | 2840 | 1780 | 2280 | 20 | | 640 |
| *Ceratium longipes* | | | 20 | | | | 40 |
| *Ceratium minutum* | | 80 | | | | | 40 |
| *Ceratium spp.* | 80 | | 20 | 40 | | 20 | 60 |
| *Ceratium tripos* | 40 | | 20 | 80 | | | |
| *Dinophysis acuminata* | | | 20 | | | | 20 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **01-Oct-97 (continued)** | | | | | | | |
| *Dinophysis norvegica* | | 80 | 20 | | | | |
| *Dinophysis spp.* | | | 40 | | | | |
| *Gonyaulax digitale* | 40 | | | | | | |
| *Prorocentrum micans* | | 80 | 40 | | | | |
| *Protoperidinium spp.* | | 160 | 20 | 80 | | 20 | |
| *Scrippsiella trochoidea* | | 40 | | 40 | | | |
| *Actinoptychus senarius* | 40 | 200 | 340 | 320 | 220 | | 20 |
| *Asterionellopsis glacialis* | 2680 | 2120 | 3520 | 10560 | 11840 | 4460 | 20 |
| *Asterionellopsis kariana* | | | | | 20 | | |
| *Bacillaria paxillifer* | | | | 40 | | | |
| *Cerataulina pelagica* | | | | 40 | 20 | | 60 |
| *Chaetoceros affinis* | | | | | | 20 | |
| *Chaetoceros compressus* | | | 60 | 80 | 60 | 40 | |
| *Chaetoceros constrictus* | | | 100 | 40 | 40 | 40 | |
| *Chaetoceros debilis* | 1160 | 3040 | 940 | 1160 | 1440 | 200 | |
| *Chaetoceros decipiens* | 40 | 40 | 60 | | 40 | | |
| *Chaetoceros laciniosus* | | 120 | 80 | 200 | 20 | | |
| *Chaetoceros lorenzianus* | 40 | | | 120 | | | |
| *Chaetoceros simplex* | 240 | 240 | 40 | | | 20 | 300 |
| *Chaetoceros socialis* | 40 | | | | | | |
| *Chaetoceros spp.* | 160 | 1120 | 460 | 560 | 540 | 160 | 160 |
| *Chaetoceros teres* | 40 | 40 | | | | | |
| *Corethron criophilum* | 40 | | 20 | 40 | | | |
| *Cylindrotheca closterium* | 440 | 1000 | 360 | 440 | 380 | 340 | 380 |
| *Dactyliosolen fragilissimus* | | 40 | | 40 | | 20 | |
| *Ditylum brightwellii* | 1400 | 2000 | 1160 | 1960 | 1320 | 360 | 580 |
| *Fragilaria spp.* | | | | | | 20 | |
| *Guinardia delicatula* | 240 | 1000 | 540 | 600 | 220 | 80 | 360 |
| *Guinardia flaccida* | 120 | 200 | | | 140 | | |
| *Guinardia striata* | 200 | 2760 | 520 | 320 | 360 | 20 | 40 |
| *Gyrosigma tennuissimum* | | 80 | | | | | 20 |
| *Leptocylindrus danicus* | | 120 | | 80 | 60 | | 20 |
| *Leptocylindrus minimus* | 120 | 240 | 60 | 40 | 40 | | 80 |
| *Licmophora abbreviata* | | | 40 | | | | 40 |
| *Navicula spp.* | 40 | 40 | | | | | |
| *Pleurosigma / Gyrosigma* | 40 | | | | | | 40 |
| *Pleurosigma angulatum* | 40 | | | | | | 20 |
| *Pleurosigma angulatum* var. *strigosa* | | 40 | 60 | 40 | 40 | 100 | |
| *Pseudo-nitzschia delicatissima* group | 360 | 960 | 440 | 680 | 440 | 280 | 40 |
| *Pseudo-nitzschia seriata* group | 160 | 160 | 120 | 240 | | | |
| *Pseudo-nitzschia spp.* | | | | 120 | | | |
| *Rhizosolenia hebetata* | | | | | | | |
| *Rhizosolenia imbricata* | | | | | 20 | | 40 |
| *Rhizosolenia spp.* | | | | 40 | | | |
| *Skeletonema costatum* | 80 | 160 | 100 | 360 | 240 | 260 | 100 |
| *Thalassionema nitzschioides* | 40 | 120 | | 40 | 100 | | |
| *Thalassiosira auguste-lineata* | | | 20 | | | | |
| *Thalassiosira baltica* | | | | 40 | | | |
| *Thalassiosira decipiens* | | | | 40 | | | |
| *Thalassiosira oestrupii* | | | | 40 | | | |
| *Thalassiosira spp.* | 120 | | 60 | | 120 | 20 | |
| *Triceratium alternans* | 80 | | | | | 20 | |
| Copepoda | | | 20 | 120 | | | 40 |
| *Dictyocha speculum* | 200 | 400 | 280 | 120 | 20 | | 80 |
| *Mesodinium rubrum* | 1080 | 7120 | 3880 | 120 | | | 420 |
| *Notholca spp.* | | | | | 20 | | |
| Tintinnids | 240 | 560 | 460 | | 40 | | 220 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **14-Oct-97** | | | | | | | |
| *Alexandrium fundyense* | 20 | | 60 | | | | |
| Armoured dinoflagellate | 20 | 80 | 160 | 40 | | | |
| *Ceratium fusus* | | 20 | | | 20 | 20 | 40 |
| *Ceratium kofoidii* | | | | 220 | | | |
| *Ceratium lineatum* | 520 | 760 | 1260 | 720 | | | 980 |
| *Ceratium longipes* | | | 40 | 40 | | | |
| *Ceratium minutum* | 40 | 40 | 300 | | | | 20 |
| *Ceratium spp.* | | 40 | | 20 | | | |
| *Ceratium tripos* | | 20 | 60 | 60 | 20 | | |
| *Dinophysis acuminata* | | | 20 | 20 | | | |
| *Dinophysis acuta* | | | | 20 | | | |
| *Dinophysis spp.* | | | 20 | | | | |
| *Gonyaulax digitale* | | | | 20 | | | |
| *Heterocapsa triquetra* | | 20 | 20 | 20 | | | |
| *Phalacroma rotundatum* | | 20 | | | | | |
| *Prorocentrum micans* | 40 | 20 | 100 | | | | |
| *Protoperidinium conicum* | | | | 20 | | | |
| *Protoperidinium spp.* | 20 | | 40 | | 20 | | |
| *Scrippsiella trochoidea* | | | 100 | 20 | | | |
| *Actinoptychus senarius* | 640 | 220 | 80 | 80 | 660 | 180 | 160 |
| *Asterionellopsis glacialis* | 160 | 80 | | 80 | 100 | | |
| *Cerataulina pelagica* | | | 60 | | | 60 | 180 |
| *Chaetoceros compressus* | | | | | | 20 | |
| *Chaetoceros constrictus* | | 20 | 20 | 40 | | 20 | |
| *Chaetoceros debilis* | 960 | 280 | 400 | 500 | 300 | | 20 |
| *Chaetoceros decipiens* | | | | | | | 20 |
| *Chaetoceros laciniosus* | 40 | 40 | 20 | 80 | 20 | | |
| *Chaetoceros perpusillus* | | | | 20 | | | |
| *Chaetoceros simplex* | 380 | 60 | | | | | 800 |
| *Chaetoceros socialis* | 20 | | | 20 | | | |
| *Chaetoceros spp.* | 260 | 20 | 120 | 200 | 120 | 20 | 80 |
| *Chaetoceros subtilis* | | | | | | 20 | |
| *Corethron criophilum* | 20 | | | | 40 | | 20 |
| *Coscinodiscus spp.* | | | | | 20 | | |
| *Cylindrotheca closterium* | 540 | 300 | 280 | 160 | 500 | 100 | 280 |
| *Dactyliosolen fragilissimus* | | | 40 | | | | 40 |
| *Ditylum brightwellii* | 220 | 80 | 180 | 180 | 340 | 240 | 800 |
| *Eucampia zodiacus* | 240 | | | | | | 460 |
| *Fragilaria spp.* | | | 20 | | | | |
| *Guinardia delicatula* | 740 | 100 | 340 | 200 | 140 | 60 | 1640 |
| *Guinardia flaccida* | 300 | 160 | | | 140 | | 520 |
| *Guinardia striata* | 540 | 80 | 380 | 440 | 300 | 80 | 360 |
| *Gyrosigma fasciola* | | | | | | | 60 |
| *Leptocylindrus danicus* | | | | | | | 20 |
| *Leptocylindrus minimus* | 180 | 60 | 60 | 40 | 20 | | 180 |
| *Licmophora abbreviata* | | | | | | | 20 |
| *Navicula spp.* | 20 | | | | 20 | 20 | 20 |
| *Pleurosigma / Gyrosigma* | 20 | | | | | | 60 |
| *Pleurosigma angulatum* | 20 | | | | | | 40 |
| *Pleurosigma angulatum* var. *strigosa* | 60 | | | 20 | 60 | 20 | |
| *Pseudo-nitzschia delicatissima* group | 620 | 660 | 320 | 420 | 560 | 180 | 40 |
| *Pseudo-nitzschia seriata* group | | | 20 | 20 | 60 | 20 | 100 |
| *Rhizosolenia setigera* | | | | | | | 20 |
| *Skeletonema costatum* | | 80 | | | 60 | | 80 |
| *Thalassiosira spp.* | 140 | | 20 | 80 | 80 | 40 | 20 |
| Copepoda | 60 | 20 | | | 20 | | 40 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **14-Oct-97 (continued)** | | | | | | | |
| *Dictyocha speculum* | 360 | 160 | 280 | 100 | 20 | 20 | 1460 |
| *Eutreptia / Eutreptiella* | 20 | | | | | | 40 |
| *Helicostomella spp.* | 60 | | | | | | |
| *Mesodinium rubrum* | 1640 | 720 | 5680 | 320 | | | 4220 |
| Tintinnids | 320 | 80 | 620 | 240 | | | 900 |
| **12-Nov-97** | | | | | | | |
| Armoured dinoflagellate | | 20 | 20 | 60 | 20 | | |
| *Ceratium fusus* | 40 | | | | | 20 | |
| *Ceratium kofoidii* | | | 140 | 60 | | | |
| *Ceratium lineatum* | 40 | 40 | 80 | 40 | 40 | | 200 |
| *Ceratium minutum* | | | | 20 | | | |
| *Ceratium spp.* | | 20 | | | 20 | | 80 |
| *Ceratium tripos* | 40 | 20 | | 40 | 20 | | |
| *Dinophysis spp.* | | 20 | | | | | |
| *Prorocentrum micans* | | | 20 | | | | |
| *Protoperidinium spp.* | | | 100 | | | | |
| *Actinoptychus senarius* | 180 | 120 | 200 | 340 | 320 | 360 | 560 |
| *Asterionellopsis glacialis* | | | | 20 | | | |
| *Bacillaria paxillifer* | | | | 20 | | | |
| *Cerataulina pelagica* | 40 | 20 | | | | | 640 |
| *Chaetoceros convolutus* | | | 20 | | | | |
| *Chaetoceros debilis* | 60 | 20 | 60 | 160 | 20 | | 1080 |
| *Chaetoceros lorenzianus* | | | 20 | 20 | | | 40 |
| *Chaetoceros simplex* | | | | | | | 40 |
| *Chaetoceros socialis* | 20 | | | | | | |
| *Chaetoceros spp.* | | | 20 | 160 | 20 | 20 | |
| *Coscinodiscus spp.* | | | | | 20 | | |
| *Cylindrotheca closterium* | 140 | 220 | 180 | 20 | 180 | 80 | 120 |
| *Ditylum brightwellii* | 220 | 20 | 80 | 80 | 40 | 40 | 1720 |
| *Guinardia delicatula* | | | 20 | 20 | 20 | 80 | |
| *Guinardia flaccida* | | | 20 | | | | |
| *Guinardia striata* | 40 | 60 | | | 20 | | |
| *Gyrosigma fasciola* | | | | | 20 | | |
| *Lauderia annulata* | | | 20 | 40 | | | 360 |
| *Leptocylindrus danicus* | 1360 | | 220 | 360 | 60 | 40 | 11840 |
| *Leptocylindrus minimus* | 840 | 20 | 440 | 400 | 100 | 120 | 8440 |
| *Licmophora abbreviata* | | | | | | | 40 |
| *Navicula spp.* | | 40 | 20 | | | 100 | |
| *Odontella regia* | 20 | | | 80 | | 40 | |
| *Pleurosigma / Gyrosigma* | | | | | | | 40 |
| *Pleurosigma angulatum* var. *strigosa* | 20 | | | | | | 200 |
| *Pseudo-nitzschia delicatissima* group | 120 | 40 | 60 | 100 | 20 | 40 | 200 |
| *Pseudo-nitzschia seriata* group | 20 | 20 | | | | | 40 |
| *Rhizosolenia hebetata* | | | | | 60 | | |
| *Rhizosolenia setigera* | | | | | | | 40 |
| *Skeletonema costatum* | 80 | 40 | 20 | | | | 160 |
| *Thalassionema nitzschioides* | 40 | | | 20 | | | 400 |
| *Thalassiosira auguste-lineata* | 20 | | | | | | |
| *Thalassiosira spp.* | 20 | 20 | 40 | 80 | 20 | | 80 |
| *Triceratium alternans* | | | | | 20 | | |
| Copepoda | 20 | 20 | | 20 | | | 40 |
| *Dictyocha speculum* | | | 20 | 20 | 40 | | 200 |
| *Helicostomella spp.* | 20 | | | | | | |
| *Mesodinium rubrum* | 140 | 100 | 80 | 80 | | | 160 |
| Tintinnids | 80 | 20 | 120 | 120 | | | 600 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **09-Dec-97** | | | | | | | |
| *Alexandrium fundyense* | | | 20 | | | | |
| Armoured dinoflagellate | | 40 | | | | | |
| *Ceratium fusus* | | 20 | | | | | |
| *Ceratium lineatum* | 40 | 20 | 20 | | 20 | 20 | |
| *Ceratium spp.* | 20 | | 20 | | | | 20 |
| *Prorocentrum micans* | | 20 | | | | | |
| *Actinoptychus senarius* | | 20 | 80 | 140 | 280 | 60 | 60 |
| *Asterionellopsis glacialis* | 20 | | | 60 | | 40 | |
| *Cerataulina pelagica* | | | | | | | 20 |
| *Chaetoceros debilis* | 80 | 20 | 80 | 20 | | | 40 |
| *Chaetoceros decipiens* | | | | | 20 | | |
| *Chaetoceros lorenzianus* | | | 20 | | | | |
| *Chaetoceros socialis* | 120 | | | | | | |
| *Chaetoceros spp.* | | 20 | | | | | |
| *Corethron criophilum* | 20 | 20 | | | | 40 | |
| *Coscinodiscus spp.* | 40 | | | | 20 | 20 | |
| *Cylindrotheca closterium* | 460 | 380 | 360 | 340 | 180 | 360 | 460 |
| *Detonula pumila* | | | | | 20 | | |
| *Ditylum brightwellii* | 840 | 420 | 360 | 520 | 360 | 400 | 580 |
| *Eucampia zodiacus* | | 20 | | | | | |
| *Guinardia delicatula* | | | | | 20 | | |
| *Guinardia striata* | | | | 20 | | | |
| *Gyrosigma fasciola* | | | | | 20 | | |
| *Lauderia annulata* | 20 | 20 | 20 | 20 | 60 | 20 | |
| *Leptocylindrus danicus* | 4360 | 580 | 900 | 600 | 980 | 1600 | 1820 |
| *Leptocylindrus minimus* | 60 | 80 | 80 | 40 | | | |
| *Licmophora abbreviata* | | | 20 | | | | |
| *Navicula spp.* | | | 20 | 60 | | 60 | |
| *Odontella regia* | | | | 40 | | | |
| *Pleurosigma / Gyrosigma* | 20 | | | | | | |
| *Pleurosigma angulatum* | | | | | | 20 | |
| *Pseudo-nitzschia delicatissima* group | 180 | 380 | 160 | 80 | 160 | 180 | 80 |
| *Pseudo-nitzschia seriata* group | | | 40 | | | | |
| *Pseudo-nitzschia spp.* | | | | | 20 | | |
| *Rhizosolenia hebetata* | | | | 40 | | | |
| *Rhizosolenia imbricata* | | | | 20 | | | |
| *Rhizosolenia pungens* | 20 | 20 | | | | | |
| *Rhizosolenia spp.* | | | | 20 | | | |
| *Skeletonema costatum* | 180 | 20 | 100 | 160 | 20 | 40 | 40 |
| *Thalassionema nitzschioides* | | 40 | 40 | 60 | 20 | 40 | 100 |
| *Thalassiosira auguste-lineata* | | 20 | | 20 | | | |
| *Thalassiosira baltica* | | 20 | | | | | 20 |
| *Thalassiosira decipiens* | | | 20 | | | | |
| *Thalassiosira gravida* | 80 | | | | | | |
| *Thalassiosira nordenskioeldii* | 20 | | | | | | |
| *Thalassiosira rotula* | | | 20 | | | | |
| *Thalassiosira spp.* | 40 | | | 20 | | 20 | |
| Copepoda | 20 | | | | | 20 | |
| *Dictyocha speculum* | 20 | 20 | | | 20 | | |
| *Mesodinium rubrum* | | 60 | 40 | | | | 60 |
| Tintinnids | | 40 | 100 | 20 | 40 | 20 | 200 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **20-Jan-98** | | | | | | | |
| Armoured dinoflagellate | | 20 | | | | | |
| *Chaetoceros convolutus* var. *trisetosa* | | 40 | | | | | |
| *Chaetoceros debilis* | | | | | | | 40 |
| *Chaetoceros decipiens* | | 20 | | | | | |
| *Cylindrotheca closterium* | 60 | 160 | | | | | 320 |
| *Ditylum brightwellii* | | | | | | | 20 |
| *Guinardia delicatula* | | | | | | | 20 |
| *Licmophora abbreviata* | 240 | | | | | | |
| *Navicula spp.* | 20 | 20 | | | | | 160 |
| Pennate diatom | 220 | | | | | | |
| *Pseudo-nitzschia delicatissima* group | 100 | 100 | | | | | 100 |
| *Rhizosolenia setigera* | | 20 | | | | | 20 |
| *Skeletonema costatum* | 60 | 40 | | | | | 20 |
| *Thalassiosira nordenskioeldii* | | 20 | | | | | |
| *Dictyocha speculum* | | 20 | | | | | 40 |
| *Mesodinium rubrum* | 180 | 220 | | | | | |
| Tintinnids | 20 | 20 | | | | | 140 |
| **10-Feb-98** | | | | | | | |
| Armoured dinoflagellate | | 20 | 60 | 20 | | | |
| *Ceratium fusus* | | | | 20 | | | |
| *Ceratium lineatum* | | | 20 | | | | 20 |
| Unarmoured dinoflagellate | | | | 20 | | | |
| *Actinoptychus senarius* | | | | 20 | | 60 | |
| *Asterionellopsis glacialis* | | | | 20 | | 20 | |
| *Chaetoceros convolutus* var. *trisetosa* | | | | 20 | | | |
| *Chaetoceros danicus* | | | | 20 | | | |
| *Coscinodiscus spp.* | 60 | | | | | | |
| *Cylindrotheca closterium* | 20 | 20 | 160 | 80 | 220 | 200 | 20 |
| *Ditylum brightwellii* | | | | 20 | 20 | | |
| *Guinardia delicatula* | | | | | | 20 | |
| *Leptocylindrus minimus* | | | 20 | | | | |
| *Licmophora abbreviata* | 20 | | | | | | |
| *Navicula spp.* | 20 | | 20 | 80 | 20 | 60 | 20 |
| *Paralia marina* | | | | | 20 | | |
| *Pleurosigma / Gyrosigma* | | | | | | 20 | |
| *Pleurosigma angulatum* var. *strigosa* | | | 20 | | | | |
| *Pseudo-nitzschia delicatissima* group | 80 | 180 | 140 | 160 | | 140 | |
| *Skeletonema costatum* | 20 | 80 | 20 | 100 | 120 | 20 | 20 |
| *Thalassiosira decipiens* | | 20 | | | | | |
| *Thalassiosira spp.* | 20 | | | 20 | | 20 | |
| Copepoda | 20 | | | | | 20 | |
| *Dictyocha speculum* | | 20 | 80 | 20 | 40 | 100 | |
| Eutreptia / Eutreptiella | | | | 60 | 20 | | |
| *Mesodinium rubrum* | 200 | 100 | 100 | | 80 | | 140 |
| *Parafavella spp.* | | | | | | 20 | |
| Tintinnids | 40 | 20 | 20 | 60 | 60 | 40 | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **26-Mar-98** | | | | | | | |
| Armoured dinoflagellate | | | 20 | 40 | | | |
| *Ceratium lineatum* | 20 | | 20 | 220 | | | |
| *Ceratium longipes* | 20 | 20 | 20 | 20 | 60 | | |
| *Dinophysis spp.* | | 20 | | 20 | | | |
| *Asterionellopsis glacialis* | | | | 20 | | | |
| *Chaetoceros atlanticus* | 40 | | | | | | |
| *Chaetoceros spp.* | | | | | 20 | 20 | |
| *Chaetoceros subtilis* | 40 | | | | | | |
| *Corethron criophilum* | | | | | 20 | | |
| *Coscinodiscus spp.* | | 20 | | 20 | | | |
| *Cylindrotheca closterium* | | | | 80 | 80 | 40 | 20 |
| *Dactyliosolen fragilissimus* | | | | 20 | | | |
| *Ditylum brightwellii* | 20 | | | | | | |
| *Fragilaria spp.* | | | | 20 | | | |
| *Leptocylindrus minimus* | 20 | | | | 20 | | 40 |
| *Licmophora abbreviata* | | | | 20 | | | |
| *Navicula spp.* | | 20 | | 60 | | 40 | 20 |
| *Odontella obtusa* | | | 20 | | | | |
| Pennate diatom | | | 20 | 40 | 60 | 120 | |
| *Pleurosigma / Gyrosigma* | | | | | | 20 | |
| *Pleurosigma angulatum* var. *strigosa* | | | | | 20 | | |
| *Pseudo-nitzschia delicatissima* group | | | 100 | 80 | 20 | 40 | 20 |
| *Rhizosolenia setigera* | | | | | | | 20 |
| *Rhizosolenia spp.* | | | | 40 | | | |
| *Skeletonema costatum* | 60 | 20 | 200 | 260 | 220 | 480 | 20 |
| *Thalassionema nitzschioides* | | | | | 40 | | |
| *Thalassiosira angulata* | | | | | 20 | | |
| *Thalassiosira auguste-lineata* | | | | | 20 | | |
| *Thalassiosira gravida* | | | | 20 | | | |
| *Thalassiosira spp.* | 40 | | 40 | 40 | 40 | 20 | |
| Copepoda | | | | | | | |
| *Dictyocha speculum* | 20 | | | | 20 | | |
| *Mesodinium rubrum* | 20 | | | | | | 20 |
| *Ptychocylis spp.* | | | | | 20 | | |
| Tintinnids | | 20 | 60 | | | | 20 |
| **21-Apr-98** | | | | | | | |
| *Alexandrium fundyense* | | | | | | | 40 |
| Armoured dinoflagellate | 40 | 100 | | 40 | 60 | | 20 |
| *Dinophysis spp.* | | | | 20 | | | |
| *Protoperidinium spp.* | | | 20 | 20 | | | |
| *Asterionellopsis glacialis* | | | | | 20 | | |
| *Chaetoceros compressus* | | | | | 20 | | |
| *Chaetoceros constrictus* | | | | | | 20 | |
| *Chaetoceros debilis* | | | | 60 | | 80 | 20 |
| *Chaetoceros diadema* | | | | | 20 | | |
| *Chaetoceros didymus* | | | 20 | | | | |
| *Chaetoceros laciniosus* | | | | | | 20 | |
| *Chaetoceros spp.* | 60 | | 20 | 80 | 60 | 120 | 60 |
| *Chaetoceros subtilis* | 20 | | | | | | |
| *Cylindrotheca closterium* | 60 | | | 20 | 200 | 100 | 20 |
| *Dactyliosolen fragilissimus* | | | | 20 | | | |
| *Ditylum brightwellii* | | 20 | | | | | |
| *Leptocylindrus danicus* | | | | | | 20 | |
| *Leptocylindrus minimus* | | 40 | 80 | | | | |
| *Licmophora abbreviata* | 40 | 20 | | | | | 20 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **21-Apr-98 (continued)** | | | | | | | |
| *Melosira spp.* | | | | | | | 20 |
| *Navicula spp.* | 60 | | | | 20 | | |
| *Pleurosigma / Gyrosigma* | | | 20 | | | | |
| *Porosira glacialis* | 20 | 60 | 60 | 20 | | 20 | 20 |
| *Pseudo-nitzschia delicatissima* group | 60 | 40 | | 60 | 40 | | 20 |
| *Rhizosolenia hebetata* | | | 20 | | | 20 | 20 |
| *Skeletonema costatum* | 120 | 60 | 120 | 440 | 460 | 560 | 180 |
| *Thalassionema nitzschioides* | | | | | 20 | 40 | |
| *Thalassiosira decipiens* | 20 | | | | | | |
| *Thalassiosira nordenskioeldii* | | | | | 20 | | |
| *Thalassiosira spp.* | 40 | 20 | | | | 60 | 20 |
| Copepoda | | 40 | | | | 20 | |
| *Dictyocha speculum* | 20 | 40 | | | 20 | | |
| *Mesodinium rubrum* | 80 | 20 | 100 | 40 | | | 460 |
| *Ptychocylis spp.* | | | | | | | 20 |
| Tintinnids | 40 | | | 200 | | | 360 |
| **12-May-98** | | | | | | | |
| *Alexandrium fundyense* | 300 | 240 | 60 | 60 | 40 | | 100 |
| *Alexandrium fundyense* (duplet) | 40 | 20 | | | 20 | | |
| *Alexandrium ostenfeldii* | | 40 | | | | | |
| *Amylax triacantha* | | | 20 | | | | |
| Armoured dinoflagellate | 60 | 180 | 140 | 280 | 80 | | |
| *Ceratium kofoidii* | 40 | | | | | | |
| *Ceratium lineatum* | 40 | | | | | 20 | |
| *Ceratium longipes* | 20 | 80 | 40 | 40 | | | |
| *Ceratium spp.* | 20 | | | 20 | | | |
| *Heterocapsa triquetra* | 40 | 80 | | 120 | | | |
| *Protoperidinium denticulatum* | 40 | | | | | | |
| *Protoperidinium ovatum* | | 20 | 40 | | | | 60 |
| *Protoperidinium spp.* | 240 | 20 | | | | | |
| Unarmoured dinoflagellate | | | | 40 | 20 | | |
| *Asterionellopsis glacialis* | 20 | 20 | | 120 | 40 | | |
| *Bacterosira bathyomphala* | 160 | | | | | | |
| *Chaetoceros altanticus* | | 20 | 20 | | 20 | | |
| *Chaetoceros compressus* | 120 | 80 | 140 | 220 | 20 | | |
| *Chaetoceros constrictus* | 60 | 60 | 60 | 60 | 20 | | |
| *Chaetoceros convolutus* | | 20 | | | | | |
| *Chaetoceros convolutus* var. *trisetosa* | | 140 | 120 | 60 | 40 | | 40 |
| *Chaetoceros debilis* | 220 | 420 | 400 | 1060 | 140 | | 40 |
| *Chaetoceros decipiens* | | 20 | 120 | | 40 | | 40 |
| *Chaetoceros didymus* | | | 20 | 40 | 60 | | 20 |
| *Chaetoceros ingolfianus* | 20 | | 20 | 100 | 20 | | |
| *Chaetoceros laciniosus* | 40 | 60 | 120 | 60 | 20 | | 20 |
| *Chaetoceros perpusillus* | | | | | | | 100 |
| *Chaetoceros similis* | | | | | | | 80 |
| *Chaetoceros simplex* | 20 | | | | | | 140 |
| *Chaetoceros spp.* | 220 | 240 | 240 | 900 | 220 | | 40 |
| *Chaetoceros subtilis* | 120 | 40 | 20 | | | | 20 |
| *Chaetoceros tenuissimus* | | | | | | | 140 |
| *Chaetoceros teres* | | | 20 | | | | |
| *Corethron criophilum* | | 20 | | | | | |
| *Coscinodiscus spp.* | | | 20 | 40 | 40 | | 20 |
| *Cylindrotheca closterium* | 40 | 60 | 60 | 140 | 220 | 100 | 300 |
| *Dactyliosolen fragilissimus* | 120 | 160 | 120 | 140 | 20 | | |
| *Ditylum brightwellii* | | | | 60 | 60 | | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **12-May-98 (continued)** | | | | | | | |
| *Eucampia groenlandica* | 20 | | | | | | 60 |
| *Eucampia zodiacus* | | | 20 | | | | |
| *Guinardia delicatula* | | 60 | | | | | |
| *Guinardia flaccida* | 20 | | | | | | |
| *Lauderia annulata* | | | | | 20 | | |
| *Leptocylindrus minimus* | 400 | 640 | 580 | 480 | 320 | 100 | 640 |
| *Navicula spp.* | 20 | | 20 | | 20 | 40 | 20 |
| *Pleurosigma angulatum* | | | | | | 40 | 20 |
| *Porosira glacialis* | 260 | 160 | 120 | 20 | 120 | | |
| *Pseudo-nitzschia delicatissima* group | 440 | 780 | 680 | 320 | 600 | 20 | 760 |
| *Rhabdonema spp.* | | 20 | | | | | |
| *Rhizosolenia hebetata* | 20 | 100 | 60 | | | | |
| *Rhizosolenia imbricata* | 60 | | 20 | | | | |
| *Rhizosolenia setigera* | | | 20 | | | | |
| *Rhizosolenia spp.* | | | | 40 | | | |
| *Skeletonema costatum* | 140 | 320 | 460 | 440 | 400 | 140 | 2940 |
| *Thalassionema nitzschioides* | | | 40 | | | | 20 |
| *Thalassiosira auguste-lineata* | 40 | 60 | 60 | | 80 | | 40 |
| *Thalassiosira baltica* | | 20 | 20 | | | | |
| *Thalassiosira decipiens* | 200 | 600 | 780 | | | | 80 |
| *Thalassiosira gravida* | | 80 | | | | | 60 |
| *Thalassiosira nordenskioeldii* | 200 | 700 | 460 | 600 | 380 | | 180 |
| *Thalassiosira oestrupii* | | | | | | 20 | |
| *Thalassiosira spp.* | 240 | | | 700 | 420 | | 20 |
| *Brachionus spp.* | 20 | | | | | | |
| Copepoda | | | | 40 | | | |
| *Dictyocha speculum* | | 60 | 20 | 80 | 20 | | |
| *Dinobryon spp.* | | 20 | | | | | |
| Eutreptia / Eutreptiella | | | | 100 | | 20 | |
| *Mesodinium rubrum* | 1360 | 680 | 3800 | 740 | 60 | | 1020 |
| *Ptychocylis spp.* | | 20 | | | | | |
| Tintinnids | 580 | 420 | 620 | 840 | | | 560 |
| **19-May-98** | | | | | | | |
| *Alexandrium fundyense* | 240 | 360 | 600 | | | | 160 |
| *Alexandrium fundyense* (duplet) | | 40 | 80 | | | | |
| *Alexandrium ostenfeldii* | 40 | 240 | 80 | | | | |
| Armoured dinoflagellate | 40 | 680 | | 160 | 40 | | 160 |
| *Ceratium lineatum* | | | 40 | | | | |
| *Ceratium longipes* | | 160 | 160 | | | | |
| *Dinophysis acuta* | | 40 | | | | | |
| *Dinophysis norvegica* | | | | 80 | | | |
| *Heterocapsa triquetra* | | | 400 | | | | 80 |
| *Protoperidinium depressum* | | 40 | 40 | | | | |
| *Protoperidinium spp.* | 80 | 80 | 520 | | | | |
| *Scrippsiella trochoidea* | | | 120 | | | | 40 |
| Unarmoured dinoflagellate | | 40 | | 80 | | | |
| *Asterionellopsis glacialis* | 80 | 40 | 80 | | 120 | 20 | |
| *Asterionellopsis kariana* | | | | 80 | | | |
| *Bacterosira bathyomphala* | | | 40 | | | | |
| *Chaetoceros altanticus* | 40 | | | | 40 | | |
| *Chaetoceros borealis* | | | | 80 | | | |
| *Chaetoceros brevis* | | 40 | | | | | |
| *Chaetoceros compressus* | 1840 | 4320 | 6680 | 6560 | 2040 | 380 | 40 |
| *Chaetoceros constrictus* | 720 | 240 | 880 | | 40 | | 80 |
| *Chaetoceros convolutus* | 40 | | | | | | |

| ORGANISM<br>**19-May-98 (continued)** | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| *Chaetoceros convolutus* var. *trisetosa* | 280 | 120 | 240 | 240 | 120 | | 240 |
| *Chaetoceros debilis* | 2800 | 3240 | 3800 | 7680 | 2120 | 520 | 200 |
| *Chaetoceros decipiens* | 40 | | 120 | 240 | 120 | 20 | 40 |
| *Chaetoceros furcellatus* | | | | | 40 | | |
| *Chaetoceros ingolfianus* | 1040 | 1120 | 1320 | 1360 | 320 | 20 | 160 |
| *Chaetoceros laciniosus* | 480 | 480 | 680 | 240 | | | 120 |
| *Chaetoceros perpusillus* | | | | | | | 1240 |
| *Chaetoceros similis* | | | | | 40 | | 880 |
| *Chaetoceros simplex* | | | | | 80 | | 7000 |
| *Chaetoceros socialis* | | | | 80 | | | |
| *Chaetoceros spp.* | 1600 | 4040 | 4480 | 4560 | 2680 | 620 | 600 |
| *Chaetoceros subtilis* | | | 40 | | | | |
| *Chaetoceros teres* | | | | | | | 40 |
| *Coscinodiscus spp.* | | 40 | | 80 | 40 | 20 | |
| *Cylindrotheca closterium* | 320 | 280 | 400 | 160 | 520 | 160 | 920 |
| *Dactyliosolen fragilissimus* | 320 | 240 | 480 | 240 | 320 | | 40 |
| *Ditylum brightwellii* | | | | 80 | 40 | 20 | |
| *Eucampia groenlandica* | | 80 | | 480 | 120 | | |
| *Eucampia spp.* | | | | | | 20 | |
| *Eucampia zodiacus* | 160 | | 280 | 160 | | 20 | 320 |
| *Guinardia flaccida* | | | | 80 | | | |
| *Leptocylindrus danicus* | 80 | 80 | 160 | 80 | 200 | | 120 |
| *Leptocylindrus minimus* | 1320 | 440 | 1720 | 1840 | 880 | 80 | 5720 |
| *Navicula spp.* | 40 | 40 | | | | | 40 |
| *Paralia marina* | | | | | | 40 | |
| *Porosira glacialis* | 760 | | 920 | | | | 160 |
| *Proboscia alata* | 40 | | | | | | |
| *Pseudo-nitzschia delicatissima* group | 1760 | 1880 | 5080 | 4160 | 680 | 200 | 12280 |
| *Pseudo-nitzschia seriata* group | | 120 | 80 | 80 | | | |
| *Rhizosolenia hebetata* | | 120 | | 80 | 240 | | |
| *Rhizosolenia setigera* | | | | | | 20 | |
| *Rhizosolenia spp.* | | | | 240 | | 20 | |
| *Skeletonema costatum* | 520 | 640 | 1080 | 1040 | 800 | 320 | 10600 |
| *Thalassionema nitzschioides* | | | | | | | 40 |
| *Thalassiosira auguste-lineata* | 160 | 120 | 240 | 400 | 160 | 20 | |
| *Thalassiosira baltica* | | | | | | | 160 |
| *Thalassiosira decipiens* | 1360 | 1400 | 2040 | 1440 | | | 2880 |
| *Thalassiosira gravida* | | 40 | 40 | | | | 120 |
| *Thalassiosira nordenskioeldii* | 1280 | 1760 | 3560 | 2160 | 760 | 100 | 1080 |
| *Thalassiosira spp.* | 80 | 160 | 120 | 3600 | 2640 | 480 | |
| Copepoda | | 40 | | | | | |
| *Dictyocha speculum* | 40 | 40 | 40 | 80 | | | 80 |
| Eutreptia / Eutreptiella | | 360 | | | | | |
| *Favella spp.* | 40 | | | | | | |
| *Mesodinium rubrum* | 1560 | 240 | 2040 | | | | 3120 |
| *Ptychocylis spp.* | 40 | | | | | | |
| Tintinnids | 920 | 40 | 680 | | 120 | | 440 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **26-May-98** | | | | | | | |
| *Alexandrium fundyense* | | | 240 | 40 | | | 120 |
| *Alexandrium ostenfeldii* | | 100 | | | | | |
| Armoured dinoflagellate | 160 | 200 | 200 | 320 | | | 80 |
| *Ceratium horridum* | 40 | | | | | | |
| *Ceratium lineatum* | | | | 80 | 40 | | |
| *Dinophysis acuminata* | | | 40 | 40 | | | |
| *Dinophysis norvegica* | | | 40 | | | | |
| *Heterocapsa triquetra* | | | | 40 | | | |
| *Protoperidinium spp.* | | | | 40 | | | |
| Unarmoured dinoflagellate | | | | 40 | | | |
| *Achnanthes spp.* | | 100 | | | | | |
| *Asterionellopsis glacialis* | | 300 | 240 | 40 | | 120 | |
| *Asterionellopsis kariana* | | | | 40 | | | |
| *Cerataulina pelagica* | | 100 | | | | | |
| *Chaetoceros compressus* | 2280 | 10800 | 2520 | 2400 | 960 | 520 | 320 |
| *Chaetoceros constrictus* | 80 | 300 | 200 | | 80 | | |
| *Chaetoceros convolutus* | | | | 40 | | | |
| *Chaetoceros convolutus* var. *trisetosa* | 40 | | 200 | 40 | | | 120 |
| *Chaetoceros debilis* | 2520 | 4500 | 1840 | 1920 | 1640 | 360 | 480 |
| *Chaetoceros decipiens* | 80 | | | 40 | | 80 | |
| *Chaetoceros furcellatus* | 40 | 100 | 40 | 80 | | 40 | |
| *Chaetoceros ingolfianus* | 80 | 100 | 160 | 360 | | | 40 |
| *Chaetoceros laciniosus* | 160 | 400 | 200 | 80 | | 40 | 40 |
| *Chaetoceros similis* | 160 | | 160 | 120 | | | 280 |
| *Chaetoceros simplex* | | 300 | 200 | 200 | 80 | | 1120 |
| *Chaetoceros spp.* | 1720 | 9000 | 1600 | 2200 | 1080 | 1400 | 1400 |
| *Chaetoceros tenuissimus* | 40 | | | | | | |
| *Corethron criophilum* | | | 40 | | | | 40 |
| *Coscinodiscus spp.* | | | | 40 | 120 | | |
| *Cylindrotheca closterium* | 240 | 300 | 120 | 120 | 280 | 40 | 960 |
| *Dactyliosolen fragilissimus* | 160 | 700 | 320 | 240 | 40 | | |
| *Ditylum brightwellii* | | | | | 120 | | |
| *Eucampia groenlandica* | | 400 | 40 | 600 | | | 320 |
| *Eucampia zodiacus* | 80 | | 160 | | 160 | | |
| *Guinardia delicatula* | | 100 | | | | | |
| *Guinardia flaccida* | | | | | | 40 | |
| *Lauderia annulata* | 40 | | | | | | |
| *Leptocylindrus danicus* | | | 80 | 120 | | | 120 |
| *Leptocylindrus minimus* | 3400 | 1500 | 2600 | 3400 | 1120 | | 5680 |
| *Licmophora abbreviata* | | | | | 40 | | |
| *Melosira monoliformis* | | 100 | 600 | | | | 280 |
| *Navicula spp.* | 200 | | | | 40 | 80 | 40 |
| *Odontella aurita* | | | 40 | | | | |
| *Odontella obtusa* | | | 80 | | | | |
| *Paralia marina* | | | | | 40 | | |
| *Pleurosigma / Gyrosigma* | 40 | | | | | 40 | |
| *Pleurosigma angulatum* | | | | 40 | 40 | 120 | 280 |
| *Porosira glacialis* | 320 | | 320 | | | | |
| *Pseudo-nitzschia delicatissima* group | 6320 | 10900 | 4480 | 6760 | 2960 | 200 | 7920 |
| *Pseudo-nitzschia seriata* group | | 100 | | 40 | | 40 | 40 |
| *Rhabdonema spp.* | | | 40 | | | | 40 |
| *Rhizosolenia hebetata* | 40 | | | 80 | 80 | | |
| *Rhizosolenia setigera* | | | | | 40 | | |
| *Rhizosolenia spp.* | | | | | 40 | | |
| *Skeletonema costatum* | 440 | 700 | 400 | 240 | 240 | 640 | 680 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **26-May-98 (continued)** | | | | | | | |
| *Stephanopyxis turris* | | 100 | | | 40 | | |
| *Thalassiosira auguste-lineata* | 160 | 100 | 280 | 240 | 200 | | |
| *Thalassiosira baltica* | | | 120 | | 40 | | |
| *Thalassiosira decipiens* | 2320 | | 1720 | 2200 | | | |
| *Thalassiosira gravida* | 480 | 500 | 760 | 40 | 280 | | 160 |
| *Thalassiosira nordenskioeldii* | 960 | | 720 | 1680 | 400 | | 440 |
| *Thalassiosira spp.* | 1280 | 7800 | 880 | 4760 | 2720 | 760 | 6480 |
| *Brachionus spp.* | 40 | | 80 | | | | |
| *Dictyocha speculum* | | | 40 | 80 | | | |
| Eutreptia / Eutreptiella | | | | 40 | | | 80 |
| *Helicostomella spp.* | 40 | | 80 | 40 | | | 40 |
| *Mesodinium rubrum* | | 300 | 640 | 320 | | | 1480 |
| *Parafavella spp.* | | | | 40 | | | |
| Tintinnids | 40 | 100 | 120 | 200 | 40 | 80 | 560 |
| **02-Jun-98** | | | | | | | |
| *Alexandrium fundyense* | 400 | 160 | 80 | 160 | | | |
| *Alexandrium fundyense* (duplet) | 40 | | | | | | |
| *Alexandrium ostenfeldii* | | | | 240 | | | |
| Armoured dinoflagellate | 120 | 80 | 120 | 400 | | | |
| *Ceratium longipes* | | 80 | | | | | |
| *Ceratium spp.* | 80 | | | | | | |
| *Gyrodinium spp.* | | | | | 40 | | |
| *Heterocapsa triquetra* | 40 | | 40 | | | | |
| *Protoperidinium spp.* | 120 | 40 | 200 | | | | 80 |
| *Scrippsiella trochoidea* | | 80 | | | | | |
| *Asterionellopsis glacialis* | 200 | 320 | | 80 | | 40 | 40 |
| *Cerataulina pelagica* | | 40 | | | | | |
| *Chaetoceros altanticus* | | | | 80 | | | |
| *Chaetoceros compressus* | 1360 | 1360 | 80 | 80 | 160 | 100 | 160 |
| *Chaetoceros constrictus* | 40 | 120 | 40 | | 120 | 80 | 80 |
| *Chaetoceros convolutus* | | | | 80 | | 20 | |
| *Chaetoceros convolutus* var. *trisetosa* | | | | | 40 | 20 | 80 |
| *Chaetoceros debilis* | 2520 | 2400 | 1160 | 3200 | 1880 | 660 | 320 |
| *Chaetoceros decipiens* | | 160 | 80 | 160 | 40 | | 120 |
| *Chaetoceros diadema* | | | | 80 | | | |
| *Chaetoceros furcellatus* | | | | | 40 | | |
| *Chaetoceros ingolfianus* | 120 | 200 | 120 | 80 | | 20 | 120 |
| *Chaetoceros laciniosus* | 240 | 440 | 480 | 160 | 80 | 20 | 80 |
| *Chaetoceros similis* | | | | | 80 | | |
| *Chaetoceros spp.* | 2240 | 2640 | 2240 | 1840 | 760 | 600 | 560 |
| *Cylindrotheca closterium* | 160 | 400 | 120 | 400 | 600 | 180 | 240 |
| *Dactyliosolen fragilissimus* | 320 | 160 | 80 | 320 | 40 | 40 | |
| *Ditylum brightwellii* | 120 | 40 | | | 40 | 20 | 80 |
| *Eucampia groenlandica* | | | | 800 | 320 | | |
| *Eucampia zodiacus* | 480 | 1240 | 720 | 640 | 160 | 100 | 560 |
| *Guinardia delicatula* | 80 | | | 80 | | | |
| *Guinardia flaccida* | | | | | 40 | | |
| *Lauderia annulata* | | | | 80 | | | |
| *Leptocylindrus danicus* | 40 | 280 | 120 | 400 | | 40 | 80 |
| *Leptocylindrus minimus* | 480 | 1240 | 280 | 80 | 1040 | 420 | 400 |
| *Melosira monoliformis* | | | 40 | | | | |
| *Navicula spp.* | 40 | | | | 80 | 80 | |
| *Plagiogrammopsis vanheurckii* | 40 | | | | 40 | 80 | 40 |
| *Porosira glacialis* | 280 | 80 | 40 | | 240 | 60 | 120 |
| *Proboscia alata* | | 40 | | | | | |
| *Pseudo-nitzschia delicatissima* group | 1800 | 24200 | 6760 | 6640 | 3720 | 720 | 2520 |
| *Pseudo-nitzschia seriata* group | 40 | | 80 | | 80 | | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **02-Jun-98 (continued)** | | | | | | | |
| *Rhabdonema spp.* | | | 40 | | | | 40 |
| *Rhizosolenia hebetata* | 40 | | | | 40 | | |
| *Rhizosolenia spp.* | | 40 | | | | | |
| *Skeletonema costatum* | 200 | 280 | | 80 | 200 | 360 | 720 |
| *Thalassionema nitzschioides* | | | | | 40 | | |
| *Thalassiosira auguste-lineata* | 80 | 40 | 80 | 320 | 200 | 40 | 80 |
| *Thalassiosira baltica* | | | 40 | | | | 40 |
| *Thalassiosira decipiens* | 400 | 40 | 760 | 80 | | | |
| *Thalassiosira gravida* | 280 | 40 | 40 | 320 | | 120 | 640 |
| *Thalassiosira nordenskioeldii* | 200 | | 880 | 240 | 1480 | | |
| *Thalassiosira spp.* | 2640 | 800 | | 4000 | 1120 | 2240 | 3880 |
| Copepoda | | 40 | 40 | | | | |
| *Dictyocha speculum* | 40 | | 120 | | | | |
| *Helicostomella spp.* | 40 | | | 80 | | | |
| *Mesodinium rubrum* | 800 | 80 | | | | | 240 |
| *Parafavella spp.* | | | | | | | 80 |
| Tintinnids | 40 | 40 | 40 | 320 | 40 | 20 | |
| **09-Jun-98** | | | | | | | |
| *Alexandrium fundyense* | 2800 | 3840 | 2600 | 40 | | | 180 |
| *Alexandrium fundyense* (duplet) | 40 | 160 | | | | | 20 |
| *Alexandrium ostenfeldii* | | 80 | | | | | |
| *Amylax triacantha* | 80 | | | | | | |
| Armoured dinoflagellate | 520 | 1040 | | 160 | 120 | 60 | 100 |
| Armoured dinoflagellate | 960 | | | | | | |
| *Ceratium horridum* | | | | 40 | | | |
| *Ceratium lineatum* | | 160 | | | | | |
| *Ceratium longipes* | | 40 | | | | | |
| *Ceratium tripos* | 40 | 80 | | | | | |
| *Dinophysis acuminata* | 80 | | | | | | |
| *Dinophysis acuta* | | 40 | 40 | | | | |
| *Dinophysis norvegica* | 40 | | 40 | | | | |
| *Dinophysis spp.* | | 80 | | | | | |
| *Gyrodinium spp.* | 120 | 80 | 40 | | | | |
| *Heterocapsa triquetra* | 560 | 1080 | 720 | | | | 20 |
| *Minuscula bipes* | 40 | | 160 | | | | |
| *Protoperidinium depressum* | 40 | | | | | | |
| *Protoperidinium spp.* | 200 | 200 | 200 | 120 | | | 20 |
| *Scrippsiella trochoidea* | 440 | 360 | 360 | | | | 20 |
| Unarmoured dinoflagellate | 480 | | | | | | 360 |
| *Actinoptychus senarius* | | | | | | 20 | |
| *Asterionellopsis glacialis* | | | | | | 60 | |
| *Cerataulina pelagica* | | | | | | | 40 |
| *Chaetoceros borealis* | | | | | 40 | | |
| *Chaetoceros constrictus* | | | | | | | 40 |
| *Chaetoceros convolutus* var. *trisetosa* | 40 | 240 | | | | | |
| *Chaetoceros debilis* | 400 | | | | 80 | 200 | 480 |
| *Chaetoceros decipiens* | | | | | | | 100 |
| *Chaetoceros furcellatus* | | 80 | | | | | |
| *Chaetoceros laciniosus* | | | | | | | 120 |
| *Chaetoceros spp.* | 240 | 40 | | | | 140 | 280 |
| *Coscinodiscus spp.* | | | | 120 | 40 | 60 | |
| *Cylindrotheca closterium* | 160 | 120 | 80 | 40 | 280 | 200 | 40 |
| *Dactyliosolen fragilissimus* | | | | 40 | 40 | | 60 |
| *Ditylum brightwellii* | 40 | | | | | 20 | |
| *Eucampia groenlandica* | | | | | 200 | 20 | |
| *Eucampia zodiacus* | 120 | | | | | 20 | 80 |
| *Guinardia delicatula* | | | | | | | 20 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **09-Jun-98 (continued)** | | | | | | | |
| *Guinardia flaccida* | | | | | 40 | | |
| *Leptocylindrus danicus* | | | | | 40 | 20 | 200 |
| *Leptocylindrus minimus* | 1520 | 2200 | 80 | 80 | 80 | 60 | |
| *Navicula spp.* | | | | | | 20 | 20 |
| *Pleurosigma angulatum* | 80 | | | 40 | | | 220 |
| *Porosira glacialis* | 200 | | | | | | |
| *Pseudo-nitzschia delicatissima group* | 120 | 80 | | | 480 | 160 | 80 |
| *Pseudo-nitzschia seriata* group | | | 40 | | 40 | | 60 |
| *Rhizosolenia hebetata* | | 80 | | | 120 | 20 | |
| *Rhizosolenia imbricata* | | | | | | | 20 |
| *Rhizosolenia spp.* | | | | | | 20 | |
| *Skeletonema costatum* | 40 | | | | | 60 | 20 |
| *Thalassiosira auguste-lineata* | 40 | 80 | | | | 20 | 40 |
| *Thalassiosira baltica* | | | | | | | 20 |
| *Thalassiosira gravida* | | | | | | | 40 |
| *Thalassiosira nordenskioeldii* | | | | | | 140 | 20 |
| *Thalassiosira spp.* | | | | | 160 | 460 | 60 |
| *Brachionus spp.* | 40 | 40 | | 40 | | | 20 |
| Copepoda | 80 | | | 40 | | | |
| *Dictyocha speculum* | 200 | 200 | 80 | 80 | 40 | | 20 |
| Eutreptia / Eutreptiella | | | | | 120 | | |
| *Helicostomella spp.* | 120 | 280 | 360 | | | 20 | 120 |
| *Mesodinium rubrum* | 1800 | 1320 | 2960 | 600 | | | 1440 |
| *Parafavella spp.* | 40 | 80 | | 120 | | | |
| *Ptychocylis spp.* | 80 | | | 80 | 40 | | |
| Tintinnids | 640 | 600 | 320 | 120 | 40 | 40 | 240 |
| **17-Jun-98** | | | | | | | |
| *Alexandrium fundyense* | 700 | 1680 | 1480 | 220 | 60 | | 240 |
| *Alexandrium fundyense* (duplet) | | 40 | 40 | 40 | | | 20 |
| *Alexandrium fundyense* (fusing) | | | 40 | | | | |
| *Alexandrium fundyense* (quadruplet) | | 40 | | | | | |
| *Alexandrium ostenfeldii* | | | | 80 | | | |
| Armoured dinoflagellate | 600 | 960 | 640 | 540 | 220 | 140 | 400 |
| *Ceratium fusus* | | | | 20 | | | |
| *Ceratium horridum* | 20 | 40 | 160 | 120 | 120 | | 20 |
| *Ceratium kofoidii* | | | 40 | | | | |
| *Ceratium lineatum* | 60 | | 80 | 60 | 60 | | |
| *Ceratium longipes* | | 40 | 240 | 300 | 240 | 20 | |
| *Ceratium spp.* | | | | | | 40 | |
| *Ceratium tripos* | 20 | | | 20 | | 20 | |
| *Dinophysis acuminata* | 180 | 160 | 80 | 140 | 80 | | 20 |
| *Dinophysis acuta* | 60 | 40 | 400 | 60 | 20 | | |
| *Dinophysis norvegica* | 20 | | | 100 | 100 | | 20 |
| *Dinophysis pulchella* | | | | 20 | | | |
| *Dinophysis spp.* | | 40 | | 40 | | | |
| *Gonyaulax spinifera* | | | | 20 | | | |
| *Gyrodinium spp.* | 340 | 560 | 320 | | | | |
| *Heterocapsa triquetra* | 240 | 2160 | 280 | 180 | 40 | | 100 |
| *Minuscula bipes* | | | 40 | 20 | 40 | | |
| *Prorocentrum minimum* | | 40 | | | | | |
| *Protoperidinium depressum* | 20 | | 40 | 20 | | | |
| *Protoperidinium divergens* | 20 | | | | | | |
| *Protoperidinium spp.* | 360 | 880 | 520 | 60 | | | 20 |
| *Scrippsiella trochoidea* | 60 | 400 | 200 | | | | |
| Unarmoured dinoflagellate | 100 | 80 | | 380 | 280 | | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **17-Jun-98 (continued)** | | | | | | | |
| *Asterionellopsis glacialis* | | | | 20 | 40 | 80 | |
| *Cerataulina pelagica* | | | | 40 | 60 | | 260 |
| *Chaetoceros atlanticus* | | | 40 | | 20 | | |
| *Chaetoceros compressus* | 20 | | | | | | |
| *Chaetoceros convolutus* var. *trisetosa* | | 40 | 160 | 40 | 240 | | |
| *Chaetoceros debilis* | | | | | | | 280 |
| *Chaetoceros decipiens* | | | | | | | 100 |
| *Chaetoceros furcellatus* | | | | | | 20 | |
| *Chaetoceros laciniosus* | | | | | | | 20 |
| *Chaetoceros spp.* | | | 40 | 20 | 20 | 40 | 20 |
| *Chaetoceros tenuissimus* | | | 40 | | | | |
| *Corethron criophilum* | | | | 20 | | | |
| *Coscinodiscus spp.* | 20 | | | 80 | 60 | | 40 |
| *Cylindrotheca closterium* | 120 | | 360 | 120 | 400 | 360 | 540 |
| *Dactyliosolen fragilissimus* | | | | | 20 | | 180 |
| *Ditylum brightwellii* | | | 40 | | 20 | | |
| *Eucampia groenlandica* | | | | | 20 | | |
| *Eucampia zodiacus* | | | | | 20 | | |
| *Guinardia delicatula* | | | | | | | 60 |
| *Leptocylindrus minimus* | 40 | 80 | 440 | 420 | 720 | 640 | |
| *Licmophora abbreviata* | 20 | | | | | | |
| *Navicula spp.* | | 40 | 40 | 60 | 40 | | 80 |
| *Paralia marina* | | | | 20 | | 20 | |
| *Pleurosigma angulatum* | 140 | | | | | 20 | 200 |
| *Porosira glacialis* | | | 40 | | | | |
| *Proboscia alata* | | | | | | 20 | |
| *Pseudo-nitzschia delicatissima* group | 20 | 80 | 120 | 20 | 20 | 60 | 60 |
| *Pseudo-nitzschia seriata* group | 20 | | | | | | 180 |
| *Rhizosolenia gracillima* | | | | | | 20 | |
| *Rhizosolenia hebetata* | | 80 | 80 | 60 | 280 | 60 | |
| *Rhizosolenia imbricata* | | | 40 | | | | |
| *Rhizosolenia spp.* | | | | 40 | 20 | 20 | 80 |
| *Skeletonema costatum* | 20 | | | | 40 | 40 | |
| *Thalassiosira auguste-lineata* | 100 | 160 | | 400 | 160 | 120 | |
| *Thalassiosira gravida* | | | | 40 | | | |
| *Thalassiosira spp.* | | | | 80 | | 180 | 20 |
| *Brachionus spp.* | 40 | 40 | 120 | | 20 | | 20 |
| Copepoda | 120 | 40 | | 40 | 20 | | 60 |
| *Dictyocha speculum* | 100 | 520 | 160 | 40 | 280 | 40 | 80 |
| Eutreptia / Eutreptiella | 280 | 1360 | | 580 | 340 | 100 | 100 |
| *Helicostomella spp.* | 160 | 120 | 40 | | 20 | | 340 |
| *Mesodinium rubrum* | 5860 | 1400 | 26280 | 2160 | 120 | | 4260 |
| *Parafavella spp.* | 60 | 40 | | 80 | | | |
| *Ptychocylis spp.* | 20 | | | 40 | 20 | | |
| Tintinnids | 2020 | 480 | 1960 | 680 | 340 | 100 | 1440 |
| **23-Jun-98** | | | | | | | |
| *Alexandrium fundyense* | 2420 | 6720 | 1800 | | | | 40 |
| *Alexandrium fundyense* (duplet) | 100 | 160 | 80 | | | | |
| *Alexandrium fundyense* (triplet) | | 40 | | | | | |
| Armoured dinoflagellate | 660 | 3120 | 1760 | 40 | 60 | 20 | 60 |
| *Ceratium horridum* | 140 | 560 | 720 | 100 | | | |
| *Ceratium kofoidii* | 40 | | | | | | |
| *Ceratium lineatum* | 120 | 360 | 80 | | 20 | | 20 |
| *Ceratium longipes* | 60 | 40 | 80 | 20 | 20 | | 20 |
| *Dinophysis acuminata* | 220 | 520 | 160 | | | | |
| *Dinophysis acuta* | 20 | 40 | | | | | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **23-Jun-98 (continued)** | | | | | | | |
| *Dinophysis norvegica* | 240 | 360 | 360 | | 40 | | |
| *Dinophysis spp.* | 20 | 40 | 280 | | | | |
| *Gonyaulax spinifera* | | 40 | | | | | |
| *Gyrodinium spp.* | 840 | 2080 | 1400 | 160 | 60 | 20 | 80 |
| *Heterocapsa triquetra* | 580 | 3880 | 2000 | 20 | | | 60 |
| *Protoperidinium ovatum* | | 80 | 120 | | 20 | | |
| *Protoperidinium spp.* | | 480 | 160 | | 40 | | |
| *Scrippsiella trochoidea* | 260 | 400 | 160 | | 20 | | |
| Unarmoured dinoflagellate | 1160 | 3560 | 2760 | 80 | 20 | | 20 |
| *Achnanthes spp.* | 20 | | | | | | |
| *Asterionellopsis glacialis* | | | | | | 20 | |
| *Cerataulina pelagica* | | | | | | | 220 |
| *Chaetoceros convolutus* var. *trisetosa* | | | | 20 | | | |
| *Chaetoceros debilis* | | | | | | | 20 |
| *Chaetoceros simplex* | | | | 20 | | | |
| *Chaetoceros spp.* | 20 | | | | 20 | | |
| *Coscinodiscus spp.* | 20 | 40 | | 20 | 60 | | |
| *Cylindrotheca closterium* | 20 | | | 100 | 140 | 60 | 200 |
| *Guinardia delicatula* | | | | | | | 20 |
| *Guinardia flaccida* | | | | | 60 | | |
| *Gyrosigma fasciola* | | | | | | | 20 |
| *Leptocylindrus minimus* | | | | | 40 | | |
| *Licmophora abbreviata* | 100 | 40 | | | | | |
| *Melosira spp.* | | | | | 20 | | |
| *Navicula spp.* | 40 | | | | 60 | 20 | 40 |
| *Pleurosigma / Gyrosigma* | | | | | | 20 | |
| *Pleurosigma angulatum* | 80 | | | | | | 320 |
| *Porosira glacialis* | | | | | | 20 | |
| *Pseudo-nitzschia delicatissima* group | | | | | 40 | | |
| *Rhizosolenia setigera* | | | | | | 20 | |
| *Skeletonema costatum* | 20 | | | | 20 | 20 | 420 |
| *Thalassiosira gravida* | | | | | 40 | | |
| *Brachionus spp.* | 20 | | | | | | |
| Copepoda | 100 | 40 | | 40 | | | 80 |
| *Dictyocha speculum* | 100 | 40 | 80 | 40 | 80 | | 20 |
| Eutreptia / Eutreptiella | 40 | 320 | 160 | | | | |
| *Helicostomella spp.* | 40 | 120 | | | | | 60 |
| *Mesodinium rubrum* | 2580 | 6160 | 2880 | 280 | 220 | 220 | 1100 |
| *Parafavella spp.* | 20 | 360 | 160 | 20 | | 20 | 20 |
| Tintinnids | 2720 | 9360 | 2000 | 280 | 120 | 80 | 1140 |
| **29-Jun-98** | | | | | | | |
| *Alexandrium fundyense* | 140 | 920 | 380 | 400 | | | |
| *Alexandrium fundyense* (duplet) | | | | 20 | | | |
| Armoured dinoflagellate | 80 | 280 | 320 | 60 | 100 | | 40 |
| *Ceratium fusus* | | | | | 20 | | 20 |
| *Ceratium horridum* | 60 | 220 | 20 | 100 | 60 | | 20 |
| *Ceratium lineatum* | 20 | 100 | 20 | 100 | | | 20 |
| *Ceratium longipes* | 20 | 120 | 40 | 20 | 120 | 40 | |
| *Ceratium tripos* | | | 20 | | | | |
| *Dinophysis acuminata* | 80 | 160 | 80 | 20 | | | 20 |
| *Dinophysis acuta* | | 40 | | 120 | 20 | | |
| *Dinophysis norvegica* | 200 | 260 | 60 | 20 | | | 40 |
| *Dinophysis spp.* | 40 | 80 | | | | | |
| *Gonyaulax spinifera* | | | | 20 | | | |
| *Gyrodinium spp.* | 240 | 540 | 120 | | | | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **29-Jun-98 (continued)** | | | | | | | |
| *Heterocapsa triquetra* | | 560 | 240 | 240 | | | 40 |
| *Phalacroma rotundatum* | | | | | 20 | | |
| *Prorocentrum minimum* | | | | 60 | | | |
| *Protoperidinium ovatum* | 40 | 20 | 60 | | | | |
| *Protoperidinium spp.* | | 180 | 80 | 140 | 40 | | |
| *Scrippsiella trochoidea* | 20 | 60 | 20 | 20 | | | |
| Unarmoured dinoflagellate | 180 | 1080 | 340 | 420 | | | |
| *Asterionellopsis glacialis* | | | 80 | | 80 | | |
| *Cerataulina pelagica* | | | | | | | 40 |
| *Chaetoceros convolutus* var. *trisetosa* | | | 40 | 40 | 40 | | |
| *Chaetoceros similis* | | | | | | | 20 |
| *Coscinodiscus spp.* | | 20 | 40 | | 20 | 60 | 60 |
| *Cylindrotheca closterium* | | | 40 | 240 | 380 | 120 | 40 |
| *Dactyliosolen fragilissimus* | | | | | | | 20 |
| *Ditylum brightwellii* | | | | | | 20 | |
| *Eucampia groenlandica* | | | | | 20 | | |
| *Guinardia delicatula* | | | | | | | 60 |
| *Leptocylindrus minimus* | | | 20 | | | | |
| *Navicula spp.* | 40 | 20 | 20 | 40 | 80 | 60 | 20 |
| *Pleurosigma angulatum* | 80 | 20 | 20 | | | | 220 |
| *Porosira glacialis* | | | 20 | | | | |
| *Pseudo-nitzschia delicatissima* group | | | 40 | 20 | 40 | | |
| *Rhizosolenia spp.* | | | | 100 | 20 | | 20 |
| *Skeletonema costatum* | | | | 40 | 40 | | 240 |
| Copepoda | 40 | 60 | | 40 | 20 | | 20 |
| *Dictyocha speculum* | 20 | 60 | 40 | 180 | | | |
| Eutreptia / Eutreptiella | | | | 100 | 100 | | |
| *Helicostomella spp.* | 20 | | | | | | |
| *Mesodinium rubrum* | 940 | 160 | 960 | 1020 | 440 | | 380 |
| *Parafavella spp.* | | 20 | | | | | |
| *Ptychocylis spp.* | | | | | 20 | 20 | |
| Tintinnids | 960 | 1440 | 320 | 200 | 340 | 100 | 40 |
| **07-Jul-98** | | | | | | | |
| *Alexandrium fundyense* | | 1320 | 1960 | | | | |
| Armoured dinoflagellate | 140 | 5080 | 2480 | 80 | | 20 | 20 |
| *Ceratium arcticum* | | | 40 | | | | |
| *Ceratium horridum* | 20 | 40 | | | | | |
| *Ceratium kofoidii* | 80 | | 40 | | | | |
| *Ceratium lineatum* | 220 | 80 | 440 | | | | |
| *Ceratium longipes* | 120 | 400 | 480 | | | | 20 |
| *Ceratium spp.* | 60 | | | | | | |
| *Ceratium tripos* | | 40 | | | | | |
| *Dinophysis acuminata* | 100 | 40 | 80 | 40 | 20 | | |
| *Dinophysis acuta* | 40 | 80 | 360 | | | | |
| *Dinophysis norvegica* | 280 | 80 | 40 | | 20 | | 20 |
| *Dinophysis spp.* | 100 | 40 | 280 | | | | |
| *Gonyaulax spinifera* | | 120 | 40 | | | | |
| *Gyrodinium spp.* | | 440 | 1880 | | | | |
| *Heterocapsa triquetra* | 100 | 3800 | 2720 | | | | |
| *Protoperidinium spp.* | | 40 | 200 | | | | |
| *Scrippsiella trochoidea* | | 80 | 320 | | | | |
| Unarmoured dinoflagellate | 160 | 1720 | 1160 | 20 | 20 | | |
| *Asterionellopsis glacialis* | | | | 20 | 20 | 20 | |
| *Cerataulina pelagica* | | | | | 20 | | 80 |
| *Chaetoceros convolutus* var. *trisetosa* | | | 40 | | 40 | | |
| *Chaetoceros debilis* | | | | | | | 180 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **07-Jul-98 (continued)** | | | | | | | |
| *Chaetoceros decipiens* | | | | | 20 | | 60 |
| *Chaetoceros similis* | | | | | | | 20 |
| *Chaetoceros spp.* | | | | | | | 80 |
| *Chaetoceros tenuissimus* | | | | | | | 20 |
| *Coscinodiscus spp.* | | | | | | 40 | 20 |
| *Cylindrotheca closterium* | 60 | 440 | 760 | 2720 | 660 | 380 | 120 |
| *Dactyliosolen fragilissimus* | | | | | | | 40 |
| *Ditylum brightwellii* | | | | | 80 | 40 | |
| *Guinardia delicatula* | | | | | | | 440 |
| *Leptocylindrus minimus* | | | | | 20 | | |
| *Licmophora abbreviata* | | 40 | | | | | |
| *Navicula spp.* | 60 | | | 40 | | 20 | |
| *Paralia marina* | | | | 60 | 20 | | |
| *Pleurosigma angulatum* | 80 | | | | | | 80 |
| *Proboscia alata* | | 40 | | | | | |
| *Pseudo-nitzschia delicatissima* group | 60 | | 120 | 260 | 20 | 40 | 40 |
| *Pseudo-nitzschia seriata* group | | | 80 | | | | |
| *Rhizosolenia spp.* | | | | 20 | | | |
| *Skeletonema costatum* | | | | 40 | | 20 | 7440 |
| *Thalassiosira auguste-lineata* | | | 40 | | | | |
| *Thalassiosira spp.* | | | | | 20 | | 20 |
| Copepoda | 20 | | | | | | 40 |
| *Dictyocha speculum* | 80 | 640 | 1040 | | | | 40 |
| Eutreptia / Eutreptiella | 160 | 160 | | 20 | 40 | | |
| *Helicostomella spp.* | | | 40 | | | | |
| *Mesodinium rubrum* | 1000 | 2400 | 2560 | 60 | 40 | 20 | 1660 |
| *Parafavella spp.* | | 40 | | | | | |
| Tintinnids | 480 | 2800 | 3480 | 340 | 20 | | 1400 |
| **14-Jul-98** | | | | | | | |
| *Alexandrium fundyense* | | | 40 | | | | |
| *Alexandrium fundyense* (duplet) | | | 20 | | | | |
| Armoured dinoflagellate | 220 | 80 | 360 | 120 | 40 | | 20 |
| *Ceratium arcticum* | | | | | | | 20 |
| *Ceratium fusus* | | | | | 20 | | |
| *Ceratium horridum* | | 100 | | 40 | | | |
| *Ceratium kofoidii* | 20 | | 40 | | | | 20 |
| *Ceratium lineatum* | 140 | 40 | 240 | 120 | | 20 | 180 |
| *Ceratium longipes* | 200 | 120 | 160 | 160 | 280 | 20 | 120 |
| *Ceratium tripos* | | 40 | 60 | 40 | | | |
| *Dinophysis acuminata* | 80 | 40 | 60 | 100 | 40 | | 60 |
| *Dinophysis acuta* | 40 | | 20 | 20 | | | |
| *Dinophysis norvegica* | 200 | 100 | 140 | 60 | 120 | | 120 |
| *Dinophysis spp.* | | | 20 | 100 | 40 | | |
| *Gonyaulax spinifera* | 40 | | 20 | | | | |
| *Gyrodinium spp.* | | | | | | | |
| *Heterocapsa triquetra* | | | 80 | | | | |
| *Prorocentrum spp.* | | | | | 20 | | |
| *Protoperidinium spp.* | 20 | | 20 | | 40 | | |
| *Scrippsiella trochoidea* | 40 | 20 | 20 | | | | |
| Unarmoured dinoflagellate | 60 | 20 | 20 | | 40 | | 20 |
| *Actinoptychus senarius* | | | | 60 | | | |
| *Asterionellopsis glacialis* | | | 20 | | | | |
| *Cerataulina pelagica* | | | | | | 20 | 480 |
| *Chaetoceros atlanticus* | | | 20 | | | | |
| *Chaetoceros borealis* | 100 | | | 20 | 20 | | |
| *Chaetoceros compressus* | | | | | | 20 | 20 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **14-Jul-98 (continued)** | | | | | | | |
| *Chaetoceros constrictus* | | | | | | | 160 |
| *Chaetoceros convolutus* | | | | | | | 20 |
| *Chaetoceros convolutus* var. *trisetosa* | 80 | | 40 | 20 | 100 | 20 | 60 |
| *Chaetoceros debilis* | 20 | | | | | | 100 |
| *Chaetoceros decipiens* | | 20 | | | 160 | | 100 |
| *Chaetoceros laciniosus* | | | | | | | 20 |
| *Chaetoceros simplex* | | | | | | | 120 |
| *Chaetoceros spp.* | | | 20 | | | 40 | 300 |
| *Chaetoceros spp.* (phaeoceros) | | | | | 20 | | |
| *Corethron criophilum* | | | | | 20 | | |
| *Coscinodiscus spp.* | 20 | | | 60 | | | 80 |
| *Cylindrotheca closterium* | 740 | 40 | 340 | 540 | 720 | 860 | 180 |
| *Dactyliosolen fragilissimus* | | | | | | | 20 |
| *Ditylum brightwellii* | | | | 20 | | | |
| *Guinardia delicatula* | 100 | | | | | | 540 |
| *Guinardia flaccida* | 120 | | | | | | 460 |
| *Leptocylindrus minimus* | | | | 20 | 40 | | 140 |
| *Navicula spp.* | 40 | | 40 | | 40 | 40 | 20 |
| *Paralia marina* | | | | | | 40 | |
| *Pleurosigma angulatum* | 300 | 20 | 20 | | | 40 | 600 |
| *Pseudo-nitzschia delicatissima* group | 160 | 60 | 100 | 300 | 80 | 20 | 140 |
| *Rhizosolenia spp.* | | | 20 | | | | 20 |
| *Skeletonema costatum* | 40 | 20 | 120 | 100 | 40 | 20 | 105210 |
| *Thalassiosira auguste-lineata* | | 20 | | | | | |
| *Thalassiosira spp.* | | | | 60 | | | 140 |
| *Brachionus spp.* | | | | | | | 20 |
| Copepoda | 40 | 20 | | 20 | 20 | | 60 |
| *Dictyocha speculum* | 40 | 60 | 60 | 240 | 120 | | 200 |
| *Ebria tripartita* | | | | | | | 40 |
| Eutreptia / Eutreptiella | 1500 | 40 | 60 | 20 | 60 | | 120 |
| *Helicostomella spp.* | | 20 | | | | | 40 |
| *Mesodinium rubrum* | 1080 | | 2380 | 620 | 180 | | 4400 |
| *Ptychocylis spp.* | | | | | | 20 | |
| Tintinnids | 360 | 80 | 840 | 740 | 60 | 80 | 420 |
| **21-Jul-98** | | | | | | | |
| *Alexandrium fundyense* | | 120 | 80 | | | 40 | |
| *Alexandrium fundyense* (cyst) | | | | | | 40 | |
| Armoured dinoflagellate | 260 | 1880 | 160 | 140 | 60 | | |
| *Ceratium fusus* | | | 20 | | 20 | | |
| *Ceratium horridum* | 20 | 40 | 40 | 20 | | | |
| *Ceratium kofoidii* | 20 | 240 | 60 | 80 | | | |
| *Ceratium lineatum* | 160 | 480 | 320 | 160 | 20 | | |
| *Ceratium longipes* | 200 | 520 | 120 | 260 | 180 | 100 | 80 |
| *Ceratium minutum* | 20 | | | | | | |
| *Ceratium spp.* | | | | 40 | | | |
| *Dinophysis acuminata* | 40 | 400 | 80 | 20 | 60 | 20 | |
| *Dinophysis acuta* | | | | 100 | 60 | | |
| *Dinophysis norvegica* | 80 | 280 | 200 | 260 | 40 | 20 | |
| *Dinophysis spp.* | | | | 120 | 20 | | |
| *Gonyaulax spinifera* | 20 | 160 | | | | | |
| *Gyrodinium spp.* | | | | | | | |
| *Heterocapsa triquetra* | | 520 | | 40 | | | |
| *Phalacroma rotundatum* | | 40 | | | | | |
| *Protoperidinium spp.* | | 80 | | 20 | 40 | | |
| *Scrippsiella trochoidea* | 20 | 40 | 20 | | | | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **21-Jul-98 (continued)** | | | | | | | |
| Unarmoured dinoflagellate | | 480 | 40 | 20 | | | |
| *Achnanthes spp.* | 20 | | | | | | |
| *Asterionellopsis glacialis* | | | 20 | | | 20 | 160 |
| *Cerataulina pelagica* | 20 | | 60 | 340 | 360 | | 14960 |
| *Chaetoceros altanticus* | 20 | 40 | | | | | |
| *Chaetoceros borealis* | 40 | 40 | 60 | 40 | | | |
| *Chaetoceros compressus* | | | 40 | 60 | 40 | | |
| *Chaetoceros constrictus* | 40 | | 120 | | | | 160 |
| *Chaetoceros convolutus* | | | | 40 | 20 | | |
| *Chaetoceros convolutus* var. *trisetosa* | 80 | 40 | 20 | 80 | 20 | 40 | 80 |
| *Chaetoceros debilis* | 320 | 80 | 380 | 400 | 300 | | 3520 |
| *Chaetoceros decipiens* | | 120 | 80 | 40 | 40 | 20 | 80 |
| *Chaetoceros laciniosus* | 20 | | | | | | 160 |
| *Chaetoceros similis* | 20 | | 60 | 100 | 280 | 40 | 160 |
| *Chaetoceros simplex* | 40 | | 120 | 80 | 340 | 20 | 1200 |
| *Chaetoceros socialis* | | | | 20 | | | |
| *Chaetoceros spp.* | 200 | 160 | 360 | 640 | 480 | 140 | 2720 |
| *Chaetoceros spp.* (phaeoceros) | 60 | | | | 20 | | |
| *Corethron criophilum* | | | 20 | 20 | | 20 | 160 |
| *Coscinodiscus spp.* | 40 | 40 | | 40 | 20 | 40 | |
| *Cylindrotheca closterium* | 300 | 160 | 40 | 240 | 500 | 1340 | 1920 |
| *Dactyliosolen fragilissimus* | | | | | 40 | | 80 |
| *Ditylum brightwellii* | | | 20 | | | | 80 |
| *Guinardia delicatula* | 120 | | 520 | 380 | 380 | 60 | 24960 |
| *Guinardia flaccida* | 20 | 40 | 720 | 900 | 280 | | 4480 |
| *Gyrosigma tennuissimum* | | | | | | | 80 |
| *Leptocylindrus danicus* | | | | 20 | | 60 | |
| *Leptocylindrus minimus* | 20 | | 100 | 100 | | | 1840 |
| *Navicula spp.* | 20 | | | | 20 | 20 | |
| *Paralia marina* | | | | | 60 | 60 | |
| *Pleurosigma / Gyrosigma* | 20 | | | 20 | | | |
| *Pleurosigma angulatum* | 140 | 40 | | 20 | | 20 | 160 |
| *Pseudo-nitzschia delicatissima* group | 160 | 120 | 20 | 60 | 200 | | |
| *Pseudo-nitzschia seriata* group | 20 | | 60 | 20 | 40 | | 560 |
| *Rhizosolenia hebetata* | | | | | | 20 | |
| *Rhizosolenia spp.* | 40 | | | 20 | 20 | | 80 |
| *Skeletonema costatum* | 220 | | 560 | 1680 | 5500 | 2100 | 7440 |
| *Thalassiosira auguste-lineata* | | | | | | | 80 |
| *Thalassiosira nordenskioeldii* | | | | 20 | | | |
| *Thalassiosira spp.* | | | 20 | 40 | 220 | 40 | 80 |
| Copepoda | | 40 | 160 | 40 | | | |
| *Dictyocha speculum* | 20 | 480 | 120 | 300 | 140 | | 880 |
| Eutreptia / Eutreptiella | | | 20 | 20 | 100 | | 400 |
| *Helicostomella spp.* | | | 60 | 20 | | | |
| *Mesodinium rubrum* | 860 | 12600 | 5600 | 100 | | | 7440 |
| Tintinnids | 120 | 360 | 160 | 400 | 220 | 140 | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **28-Jul-98** | | | | | | | |
| *Alexandrium fundyense* | | | | | | | 40 |
| Armoured dinoflagellate | 280 | 80 | | | | | 160 |
| *Ceratium kofoidii* | 40 | 40 | | | | | |
| *Ceratium lineatum* | 40 | 40 | | | | | 120 |
| *Ceratium longipes* | 240 | 60 | | | | | |
| *Ceratium spp.* | | | | | | | 80 |
| *Dinophysis acuminata* | | 20 | | | | | |
| *Dinophysis acuta* | 40 | | | | | | |
| *Dinophysis norvegica* | 200 | 80 | | | | | 120 |
| *Dinophysis spp.* | | 40 | | | | | |
| *Gonyaulax spinifera* | | 20 | | | | | |
| *Gyrodinium spp.* | | | | | | | |
| *Heterocapsa triquetra* | 160 | 40 | | | | | |
| *Protoperidinium spp.* | | | | | | | 80 |
| *Scrippsiella trochoidea* | 280 | 140 | | | | | 80 |
| Unarmoured dinoflagellate | | 20 | | | | | 40 |
| *Cerataulina pelagica* | 600 | 100 | | | | | 120 |
| *Chaetoceros compressus* | 40 | | | | | | |
| *Chaetoceros constrictus* | 200 | 80 | | | | | |
| *Chaetoceros convolutus* | 40 | | | | | | |
| *Chaetoceros convolutus* var. *trisetosa* | 40 | 60 | | | | | |
| *Chaetoceros debilis* | 2240 | 920 | | | | | 1000 |
| *Chaetoceros decipiens* | 40 | 120 | | | | | |
| *Chaetoceros laciniosus* | 280 | | | | | | |
| *Chaetoceros similis* | 40 | | | | | | 40 |
| *Chaetoceros simplex* | | 20 | | | | | |
| *Chaetoceros socialis* | 120 | 100 | | | | | |
| *Chaetoceros spp.* | 920 | 400 | | | | | 320 |
| *Chaetoceros spp.* (phaeoceros) | | 60 | | | | | |
| *Corethron criophilum* | 40 | | | | | | |
| *Coscinodiscus spp.* | | 20 | | | | | |
| *Cylindrotheca closterium* | 160 | 180 | | | | | 80 |
| *Dactyliosolen fragilissimus* | | 20 | | | | | 240 |
| *Guinardia delicatula* | 6360 | 1660 | | | | | 212090 |
| *Guinardia flaccida* | 4760 | 480 | | | | | 12600 |
| *Leptocylindrus minimus* | 80 | 40 | | | | | 840 |
| *Licmophora abbreviata* | | 20 | | | | | |
| *Navicula spp.* | 40 | | | | | | 80 |
| *Pleurosigma angulatum* | 360 | 20 | | | | | 680 |
| *Pleurosigma angulatum* var. *strigosa* | | | | | | | 40 |
| *Pseudo-nitzschia delicatissima* group | 120 | 200 | | | | | |
| *Pseudo-nitzschia seriata* group | 40 | 80 | | | | | 320 |
| *Rhizosolenia spp.* | | | | | | | 80 |
| *Skeletonema costatum* | 40 | 60 | | | | | |
| *Thalassiosira angulata* | | | | | | | 40 |
| *Thalassiosira nordenskioeldii* | | | | | | | 40 |
| *Thalassiosira spp.* | 80 | | | | | | 120 |
| Copepoda | 80 | 60 | | | | | |
| *Dictyocha speculum* | 800 | 240 | | | | | 280 |
| Eutreptia / Eutreptiella | 80 | | | | | | |
| *Helicostomella spp.* | | | | | | | 40 |
| *Mesodinium rubrum* | 7400 | 1180 | | | | | 3320 |
| Tintinnids | 240 | 200 | | | | | 40 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **04-Aug-98** | | | | | | | |
| *Alexandrium fundyense* | | | | 160 | 80 | | 80 |
| Armoured dinoflagellate | | 400 | 640 | 1840 | 80 | | 360 |
| *Ceratium fusus* | 80 | | | 80 | | | |
| *Ceratium horridum* | | | 40 | | | | |
| *Ceratium kofoidii* | | 40 | | 320 | | | |
| *Ceratium lineatum* | 560 | 80 | 40 | 960 | | | 280 |
| *Ceratium longipes* | 80 | 160 | 200 | 560 | | 40 | 160 |
| *Ceratium spp.* | | 40 | 280 | | | | |
| *Ceratium tripos* | | 40 | 40 | | | | |
| *Dinophysis acuminata* | | 40 | | 320 | | | |
| *Dinophysis acuta* | | 40 | | | 160 | | |
| *Dinophysis norvegica* | 80 | | | 400 | | | 80 |
| *Dinophysis pulchella* | | 40 | | | | | |
| *Gyrodinium spp.* | | | | | | | |
| *Heterocapsa triquetra* | | 280 | 80 | 80 | | | |
| *Minuscula bipes* | | 40 | | | | | |
| *Protoperidinium spp.* | | | | 320 | 80 | | |
| *Scrippsiella trochoidea* | 560 | 40 | 160 | 3520 | | | 360 |
| Unarmoured dinoflagellate | | 160 | 520 | 160 | | | 160 |
| *Asterionellopsis glacialis* | | | | 80 | | 20 | |
| *Cerataulina pelagica* | 80 | | 120 | | 80 | | 40 |
| *Chaetoceros borealis* | | | | | 160 | | |
| *Chaetoceros compressus* | | 80 | 40 | 240 | 240 | 20 | 40 |
| *Chaetoceros constrictus* | 160 | 280 | 40 | | | | |
| *Chaetoceros convolutus* var. *trisetosa* | 160 | 40 | 120 | 320 | 80 | | |
| *Chaetoceros debilis* | 4480 | 6040 | 1840 | 4400 | 16400 | 640 | |
| *Chaetoceros decipiens* | 560 | 80 | 40 | 80 | 160 | | 40 |
| *Chaetoceros laciniosus* | 80 | 120 | | 80 | 240 | 40 | |
| *Chaetoceros similis* | | 40 | | | | | |
| *Chaetoceros socialis* | 960 | 840 | 240 | 2160 | 80 | 100 | 40 |
| *Chaetoceros spp.* | 320 | 1320 | 1080 | 640 | 2640 | 140 | 200 |
| *Chaetoceros spp.* (phaeoceros) | | | | | 160 | | 40 |
| *Corethron criophilum* | 80 | | 40 | | | 20 | |
| *Cylindrotheca closterium* | 720 | 160 | | 640 | 1760 | 1160 | 480 |
| *Dactyliosolen fragilissimus* | | | | | | 40 | 200 |
| *Ditylum brightwellii* | | 40 | | 80 | | 20 | |
| *Guinardia delicatula* | 62160 | 4280 | 3000 | 14000 | 10640 | 2020 | 880 |
| *Guinardia flaccida* | 12000 | 800 | 520 | 8720 | 5760 | 1300 | 93520 |
| *Leptocylindrus danicus* | | | | 80 | | | 120 |
| *Leptocylindrus minimus* | 240 | 320 | 200 | 160 | 160 | 80 | 11320 |
| *Navicula spp.* | | | | | | 20 | |
| *Pleurosigma angulatum* | 160 | | 40 | | | 20 | |
| *Pseudo-nitzschia delicatissima* group | 3360 | 10600 | 80160 | 6160 | 11920 | 1440 | 40 |
| *Pseudo-nitzschia seriata* group | 240 | 320 | | 400 | 480 | | 40 |
| *Rhizosolenia spp.* | 80 | | 80 | | | | 1040 |
| *Skeletonema costatum* | 320 | 1120 | 1360 | 160 | 80 | 180 | 40 |
| *Thalassiosira spp.* | | 80 | 120 | | 80 | | 120 |
| Copepoda | 80 | | | 80 | 80 | | |
| *Dictyocha speculum* | 240 | 560 | 160 | 720 | | 20 | 280 |
| Eutreptia / Eutreptiella | 160 | 40 | 40 | 160 | 80 | 20 | 240 |
| *Helicostomella spp.* | | 520 | | | | | |
| *Mesodinium rubrum* | 8640 | 320 | 1520 | 2160 | 160 | | 5960 |
| *Salpingella spp.* | | | | | 80 | | |
| Tintinnids | | 80 | 120 | 320 | 160 | 60 | 520 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **11-Aug-98** | | | | | | | |
| *Alexandrium fundyense* | 120 | 160 | 560 | 80 | 360 | 120 | 40 |
| *Alexandrium ostenfeldii* | | | | 40 | | | |
| Armoured dinoflagellate | 240 | 720 | 880 | 360 | 400 | 80 | 80 |
| *Ceratium fusus* | | 80 | 40 | | 40 | | |
| *Ceratium kofoidii* | | 40 | 120 | 160 | 120 | | |
| *Ceratium lineatum* | 640 | 600 | 720 | 400 | 480 | 120 | 280 |
| *Ceratium longipes* | 280 | 80 | 240 | 240 | 40 | 40 | |
| *Ceratium spp.* | | | | | | | 40 |
| *Ceratium tripos* | | 40 | | 40 | | | |
| *Dinophysis acuminata* | 120 | | 40 | 80 | 80 | 40 | |
| *Dinophysis acuta* | | | | 80 | | 40 | |
| *Dinophysis norvegica* | 80 | 120 | 160 | 80 | 80 | | 40 |
| *Dinophysis spp.* | | | 40 | | 80 | | |
| *Gonyaulax spinifera* | 40 | 200 | 120 | | | | |
| *Heterocapsa triquetra* | | | 40 | | | | |
| *Phalacroma rotundatum* | | | | | 40 | | |
| *Protoperidinium depressum* | 40 | | | | 40 | | |
| *Protoperidinium ovatum* | | | 40 | | | | |
| *Protoperidinium spp.* | 40 | | 80 | | | | |
| *Scrippsiella trochoidea* | 1040 | 3360 | 2840 | 1480 | 760 | 200 | 520 |
| Unarmoured dinoflagellate | | | | | 80 | | |
| *Asterionellopsis glacialis* | | | 80 | 120 | 40 | 80 | |
| *Cerataulina pelagica* | 440 | 40 | | 40 | 360 | 160 | |
| *Chaetoceros borealis* | | | | | 40 | 40 | |
| *Chaetoceros compressus* | 240 | | 1000 | 400 | 160 | 440 | |
| *Chaetoceros concavicornis* | | | | | 40 | | |
| *Chaetoceros constrictus* | | | 40 | | | 40 | |
| *Chaetoceros convolutus* | 80 | | | | 40 | 40 | |
| *Chaetoceros convolutus* var. *trisetosa* | 40 | | 240 | 40 | 200 | 240 | |
| *Chaetoceros debilis* | 120 | | 440 | 640 | 280 | 360 | |
| *Chaetoceros decipiens* | 80 | | 40 | | | 80 | 40 |
| *Chaetoceros laciniosus* | 40 | | 160 | 80 | 120 | | |
| *Chaetoceros similis* | | | | | | 40 | |
| *Chaetoceros socialis* | 2360 | 1360 | 2400 | 1560 | 1040 | 1200 | 80 |
| *Chaetoceros spp.* | 240 | 120 | 720 | 360 | 600 | 480 | |
| *Chaetoceros spp.* (phaeoceros) | 40 | | | | | 40 | |
| *Corethron criophilum* | | | 80 | | | | |
| *Coscinodiscus spp.* | 40 | | | 40 | 40 | | 40 |
| *Cylindrotheca closterium* | 480 | 280 | 280 | 480 | 920 | 2280 | 280 |
| *Dactyliosolen fragilissimus* | 120 | | | | 40 | 120 | |
| *Ditylum brightwellii* | 40 | 40 | 280 | 200 | 40 | 160 | |
| *Guinardia delicatula* | 2040 | 2640 | 3440 | 4520 | 4080 | 2840 | 320 |
| *Guinardia flaccida* | 13680 | 1560 | 8240 | 10520 | 10600 | 9720 | 96860 |
| *Gyrosigma tennuissimum* | 80 | | | | | | |
| *Leptocylindrus danicus* | | 40 | | | | | |
| *Leptocylindrus minimus* | 600 | 920 | 720 | 360 | 280 | 240 | 1120 |
| *Licmophora abbreviata* | | 40 | | | | | |
| *Navicula spp.* | 40 | | | | | | |
| *Pleurosigma / Gyrosigma* | | 40 | | | | | 40 |
| *Pleurosigma angulatum* | 80 | | | | | 40 | 80 |
| *Pseudo-nitzschia delicatissima* group | 8880 | 840 | 19080 | 65130 | 21120 | 19960 | 120 |
| *Pseudo-nitzschia seriata* group | 680 | 400 | 320 | 640 | 760 | 160 | 80 |
| *Rhizosolenia spp.* | 80 | | | 40 | | 160 | 1200 |
| *Skeletonema costatum* | 760 | 240 | 3280 | 3040 | 2720 | 3120 | 40 |
| *Thalassiosira baltica* | | | | 40 | | | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **11-Aug-98 (continued)** | | | | | | | |
| *Thalassiosira oestrupii* | | | | | 40 | | |
| *Thalassiosira spp.* | | | | 80 | 120 | | |
| Copepoda | 40 | 40 | 80 | 80 | | | |
| *Dictyocha speculum* | 200 | 120 | 240 | 160 | 200 | 80 | |
| Eutreptia / Eutreptiella | 40 | 80 | 120 | 240 | 120 | 40 | 360 |
| *Helicostomella spp.* | | 80 | 80 | | | 40 | |
| *Mesodinium rubrum* | 640 | 2440 | 2960 | | 160 | | 2360 |
| *Salpingella spp.* | | | | | | 40 | |
| Tintinnids | 360 | 40 | 360 | 200 | 160 | 320 | 320 |
| **18-Aug-98** | | | | | | | |
| *Alexandrium fundyense* | 40 | | 40 | 560 | | 40 | |
| Armoured dinoflagellate | 360 | 240 | 680 | 1200 | 120 | 40 | 20 |
| *Ceratium kofoidii* | | 40 | | 240 | | | 100 |
| *Ceratium lineatum* | 520 | 320 | 120 | 9600 | | | 140 |
| *Ceratium longipes* | 80 | 40 | | 80 | | | 20 |
| *Ceratium spp.* | | 80 | | | | | |
| *Ceratium tripos* | 80 | | 80 | 80 | | | |
| *Dinophysis acuminata* | | | 80 | 480 | | | |
| *Dinophysis norvegica* | 40 | 40 | 120 | 720 | | | |
| *Gonyaulax spinifera* | | | 120 | | | | |
| *Gyrodinium spp.* | | | | | 40 | | |
| *Heterocapsa triquetra* | 40 | | 120 | 80 | | | |
| *Protoperidinium spp.* | 40 | 80 | | 480 | | | 40 |
| *Scrippsiella trochoidea* | 760 | 600 | 1240 | 12720 | | | 60 |
| Unarmoured dinoflagellate | | | | 160 | | | |
| *Actinoptychus senarius* | 80 | | | | | 120 | |
| *Asterionellopsis glacialis* | 40 | | | | 120 | | |
| *Cerataulina pelagica* | 80 | 40 | | | | | |
| *Chaetoceros borealis* | | | | | 120 | | |
| *Chaetoceros compressus* | | 40 | 40 | | 280 | | |
| *Chaetoceros constrictus* | | 40 | | | | | |
| *Chaetoceros debilis* | | | 40 | | 80 | | |
| *Chaetoceros socialis* | 920 | 1960 | 960 | 14880 | 720 | | 60 |
| *Chaetoceros spp.* | 80 | 120 | 80 | 80 | 40 | 40 | 60 |
| *Chaetoceros spp.* (phaeoceros) | 40 | | | | | | |
| *Corethron criophilum* | 40 | 80 | 80 | 240 | 80 | | |
| *Coscinodiscus spp.* | 80 | | | | 80 | 40 | |
| *Cylindrotheca closterium* | 360 | 240 | 40 | 80 | 320 | 520 | 100 |
| *Dactyliosolen fragilissimus* | 40 | 160 | | 2560 | 480 | 40 | 60 |
| *Ditylum brightwellii* | 80 | 40 | 80 | 160 | 80 | 40 | |
| *Guinardia delicatula* | 2360 | 1680 | 3880 | 4960 | 960 | 280 | 240 |
| *Guinardia flaccida* | 80160 | 36740 | 4760 | 13760 | 11600 | 6840 | 161990 |
| *Leptocylindrus danicus* | 280 | 240 | 480 | | | 40 | 20 |
| *Leptocylindrus minimus* | 520 | 400 | | 80 | 80 | | |
| *Paralia marina* | | | | | | 120 | |
| *Pleurosigma / Gyrosigma* | | | | | | | 20 |
| *Pleurosigma angulatum* | 40 | 40 | | | | | |
| *Pseudo-nitzschia delicatissima* group | 280 | 600 | | | 1120 | 3240 | 200 |
| *Pseudo-nitzschia seriata* group | 40 | 80 | 80 | 320 | | | |
| *Rhizosolenia spp.* | | | | | | | 280 |
| *Skeletonema costatum* | 520 | 360 | 680 | 400 | 880 | 360 | 60 |
| *Thalassiosira spp.* | | 40 | | 240 | | 40 | |
| Copepoda | | 40 | 40 | | | | 20 |
| *Dictyocha speculum* | 200 | 240 | 280 | 1360 | | | 20 |
| *Ebria tripartita* | | 40 | | 880 | | | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **18-Aug-98 (continued)** | | | | | | | |
| Eutreptia / Eutreptiella | 40 | 80 | 200 | 160 | | | 80 |
| *Helicostomella spp.* | | | 40 | | | | 20 |
| *Mesodinium rubrum* | 560 | 1120 | 1720 | 560 | 40 | 160 | 320 |
| *Notholca spp.* | | | | | | 40 | |
| *Parafavella spp.* | | | | | | 40 | |
| Tintinnids | 120 | 320 | 40 | 880 | 160 | 200 | 120 |
| **25-Aug-98** | | | | | | | |
| *Alexandrium fundyense* | | 120 | 280 | 80 | 40 | 20 | |
| *Alexandrium ostenfeldii* | | | | | 40 | | |
| Armoured dinoflagellate | 240 | 240 | 200 | 120 | 320 | 20 | 1160 |
| *Ceratium fusus* | 80 | 20 | 40 | 200 | 40 | | 40 |
| *Ceratium kofoidii* | 240 | 120 | 80 | 160 | | | |
| *Ceratium lineatum* | 1040 | 440 | 840 | 920 | 80 | 40 | 240 |
| *Ceratium longipes* | 80 | | | 80 | | | |
| *Ceratium spp.* | | | | | 40 | | |
| *Ceratium tripos* | | 20 | 120 | 120 | 80 | 20 | 40 |
| *Dinophysis acuminata* | | 20 | 240 | 120 | | | |
| *Dinophysis norvegica* | 80 | 20 | 80 | 320 | | | 80 |
| *Gonyaulax spinifera* | 160 | 280 | 160 | | | | 80 |
| *Gyrodinium spp.* | | | 40 | | | | |
| *Heterocapsa triquetra* | | 60 | 240 | | | | |
| *Phalacroma rotundatum* | | | | | 40 | | |
| *Scrippsiella trochoidea* | 960 | 240 | 920 | 760 | 280 | 20 | 160 |
| Unarmoured dinoflagellate | | 40 | 280 | | | | 160 |
| *Asterionellopsis glacialis* | | | | 240 | | 80 | |
| *Cerataulina pelagica* | | | | | 120 | | |
| *Chaetoceros borealis* | | | | | 40 | 20 | |
| *Chaetoceros compressus* | | | 40 | | 120 | 100 | |
| *Chaetoceros constrictus* | | 20 | 40 | | | 20 | |
| *Chaetoceros convolutus* var. *trisetosa* | 80 | | | 40 | 40 | 60 | |
| *Chaetoceros debilis* | | 20 | 80 | | 40 | | |
| *Chaetoceros laciniosus* | | | | | | | 40 |
| *Chaetoceros socialis* | 6320 | 380 | 4120 | 1680 | 2440 | 440 | 40 |
| *Chaetoceros spp.* | 240 | 20 | 40 | 160 | 280 | 220 | |
| *Corethron criophilum* | | | | 40 | 80 | 60 | |
| *Coscinodiscus spp.* | | | | | | 60 | 40 |
| *Cylindrotheca closterium* | 1200 | 80 | 40 | 200 | 880 | 280 | 240 |
| *Dactyliosolen fragilissimus* | 240 | | | 80 | 40 | 60 | 120 |
| *Ditylum brightwellii* | 320 | 60 | 80 | 120 | 80 | 80 | |
| *Eucampia spp.* | | | | | | | 80 |
| *Guinardia delicatula* | 5360 | 1200 | 5160 | 3280 | 3080 | 1280 | 640 |
| *Guinardia flaccida* | 38160 | 2100 | 12120 | 17120 | 14880 | 19160 | 20600 |
| *Helicotheca tamesis* | | | | | | 40 | |
| *Leptocylindrus danicus* | 400 | | 240 | | 160 | 300 | 160 |
| *Leptocylindrus minimus* | 160 | 40 | | | 40 | 40 | 240 |
| *Paralia marina* | | | | | 40 | 40 | |
| *Pleurosigma / Gyrosigma* | | | | 40 | | | |
| *Pleurosigma angulatum* | | | | | | | 120 |
| *Pseudo-nitzschia delicatissima* group | 1440 | 80 | 360 | 40 | 1520 | 1620 | 80 |
| *Pseudo-nitzschia seriata* group | 80 | 200 | 120 | 40 | 40 | 60 | |
| *Rhizosolenia spp.* | | | | 120 | | | 240 |
| *Skeletonema costatum* | 880 | 280 | 1080 | 1040 | 1040 | 720 | 360 |
| *Thalassiosira oestrupii* | | | | | 40 | | |
| *Thalassiosira spp.* | 240 | | 240 | 80 | 40 | 20 | 40 |
| Copepoda | | | 40 | 40 | | 20 | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **25-Aug-98 (continued)** | | | | | | | |
| *Dictyocha speculum* | 160 | 20 | 480 | 640 | 360 | | 80 |
| Eutreptia / Eutreptiella | 160 | 80 | 80 | 40 | 40 | | 1080 |
| *Helicostomella spp.* | | 20 | 40 | | 40 | | 40 |
| *Mesodinium rubrum* | 240 | 400 | 2960 | 120 | | | 1120 |
| Tintinnids | 160 | 100 | 280 | 360 | 40 | 40 | 200 |
| **01-Sep-98** | | | | | | | |
| *Alexandrium fundyense* | 40 | 200 | | | | | |
| Armoured dinoflagellate | 320 | 1680 | 560 | 260 | 20 | | 20 |
| *Ceratium fusus* | 80 | | | | 20 | | |
| *Ceratium kofoidii* | 20 | 240 | | 60 | | | 20 |
| *Ceratium lineatum* | 2200 | 1560 | 80 | 300 | | | 100 |
| *Ceratium longipes* | 60 | 40 | | 20 | 40 | | |
| *Ceratium minutum* | | 80 | | 20 | | | |
| *Ceratium tripos* | 60 | 160 | 40 | 20 | | | |
| *Dinophysis acuminata* | 60 | 40 | | | | | |
| *Dinophysis acuta* | 60 | | | 100 | 20 | | |
| *Dinophysis norvegica* | 100 | 120 | | 20 | | 20 | |
| *Dinophysis spp.* | | | | 40 | | | |
| *Gonyaulax spinifera* | 180 | 320 | | | | | |
| *Gyrodinium spp.* | | 760 | | | | | |
| *Heterocapsa triquetra* | 120 | 1000 | | 80 | | | |
| *Protoperidinium depressum* | | | | 20 | | | |
| *Protoperidinium spp.* | | 40 | | 100 | 20 | | 100 |
| *Scrippsiella trochoidea* | 300 | 680 | | 260 | 40 | | 80 |
| Unarmoured dinoflagellate | | 280 | | | | 20 | |
| *Actinoptychus senarius* | | | | | | 80 | |
| *Asterionellopsis glacialis* | | 120 | 80 | 180 | 40 | | |
| *Asterionellopsis kariana* | | | | | 20 | | |
| *Cerataulina pelagica* | 20 | 40 | 40 | | | | 60 |
| *Chaetoceros borealis* | 60 | | | 40 | 20 | 40 | |
| *Chaetoceros compressus* | 60 | | 40 | 100 | | 40 | 20 |
| *Chaetoceros constrictus* | 20 | 80 | 40 | | | 20 | |
| *Chaetoceros convolutus* var. *trisetosa* | | 120 | 40 | 20 | | | |
| *Chaetoceros debilis* | 60 | 80 | 40 | 40 | 20 | | |
| *Chaetoceros decipiens* | | | | | 20 | | |
| *Chaetoceros socialis* | 3240 | 10680 | 6120 | 4240 | 1340 | | 420 |
| *Chaetoceros spp.* | 540 | 440 | 240 | 120 | 220 | 100 | 100 |
| *Chaetoceros spp.* (phaeoceros) | | | | | | 40 | |
| *Corethron criophilum* | 140 | 80 | 280 | 460 | 220 | 60 | 20 |
| *Coscinodiscus spp.* | | | | | | | 20 |
| *Cylindrotheca closterium* | 220 | 80 | 40 | 300 | 1040 | 460 | 240 |
| *Dactyliosolen fragilissimus* | 180 | | | 40 | | 120 | |
| *Ditylum brightwellii* | 60 | 400 | 480 | 160 | 400 | 120 | |
| *Eucampia zodiacus* | 100 | | | | | | |
| *Guinardia delicatula* | 5400 | 6160 | 1200 | 1620 | 1920 | 1100 | 100 |
| *Guinardia flaccida* | | 80 | | 60 | 40 | 60 | 20 |
| *Leptocylindrus danicus* | 40 | | | | 20 | | 20 |
| *Leptocylindrus mediterraneus* | | | | | | 40 | |
| *Leptocylindrus minimus* | 160 | 40 | 40 | 100 | 20 | 100 | 140 |
| *Navicula spp.* | 20 | | | 20 | | 20 | |
| *Pleurosigma / Gyrosigma* | | | | | | | 40 |
| *Pleurosigma angulatum* | 60 | | | | 20 | | |
| *Pleurosigma angulatum* var. *strigosa* | | | | | | 20 | |
| *Pseudo-nitzschia delicatissima* group | 200 | 520 | 880 | 4080 | 4840 | 2180 | 280 |
| *Pseudo-nitzschia seriata* group | | 200 | | 100 | 20 | 20 | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **01-Sep-98 (continued)** | | | | | | | |
| *Rhizosolenia hebetata* | | | | | 40 | | |
| *Rhizosolenia spp.* | 420 | | 40 | 20 | | 40 | 120 |
| *Skeletonema costatum* | 200 | 1480 | 1760 | 1120 | 1400 | 640 | 220 |
| *Thalassionema nitzschioides* | | | | | | 40 | |
| *Thalassiosira oestrupii* | | 40 | | 20 | 40 | | |
| *Thalassiosira spp.* | | | 80 | 60 | 100 | | |
| *Brachionus spp.* | | | | | | | 20 |
| Copepoda | 40 | | | 80 | 40 | | 60 |
| *Dictyocha speculum* | 220 | 360 | 80 | 240 | 60 | | 120 |
| Eutreptia / Eutreptiella | 60 | 80 | | 240 | 40 | 40 | 620 |
| *Helicostomella spp.* | | 40 | | | | | 60 |
| *Mesodinium rubrum* | 1500 | 640 | 80 | | | 40 | 3720 |
| Tintinnids | 500 | | | 760 | 100 | | 160 |
| **08-Sep-98** | | | | | | | |
| *Alexandrium fundyense* | 60 | 100 | 120 | | | | |
| Armoured dinoflagellate | 160 | 180 | 160 | 100 | 80 | | 60 |
| *Ceratium fusus* | 60 | 160 | 40 | 20 | 20 | | |
| *Ceratium horridum* | | | | | | | 20 |
| *Ceratium kofoidii* | | | 120 | | | | |
| *Ceratium lineatum* | 780 | 860 | 960 | 60 | 100 | | 160 |
| *Ceratium longipes* | 40 | 20 | 80 | | | | |
| *Ceratium minutum* | | | | | | | 20 |
| *Ceratium spp.* | 20 | | 20 | | | | 40 |
| *Ceratium tripos* | 60 | 100 | 100 | 20 | 20 | | 80 |
| *Dinophysis acuminata* | | 40 | 100 | | | | |
| *Dinophysis norvegica* | 60 | 180 | 100 | | | | 20 |
| *Dinophysis spp.* | | | 120 | | | | |
| *Gonyaulax spinifera* | 60 | 80 | | | | | |
| *Gyrodinium spp.* | 160 | | | | | | |
| *Heterocapsa triquetra* | 160 | 60 | 300 | | | | |
| *Phalacroma rotundatum* | | 20 | | | | | |
| *Protoperidinium spp.* | 20 | | 40 | | | | 20 |
| *Scrippsiella trochoidea* | 260 | 340 | 840 | 60 | | 20 | 60 |
| Unarmoured dinoflagellate | 20 | | 20 | | 20 | | |
| *Actinoptychus senarius* | | | | 120 | 40 | | |
| *Asterionellopsis glacialis* | | | | | 60 | 60 | |
| *Cerataulina pelagica* | 280 | 180 | 340 | 100 | | 40 | 460 |
| *Chaetoceros borealis* | | | | 40 | 20 | | |
| *Chaetoceros compressus* | | | 20 | | 20 | | 20 |
| *Chaetoceros constrictus* | 40 | 20 | | | | | |
| *Chaetoceros convolutus* var. *trisetosa* | | 20 | | 20 | 20 | 40 | |
| *Chaetoceros danicus* | | | | | 40 | | |
| *Chaetoceros debilis* | 40 | 60 | 40 | 20 | 60 | | 20 |
| *Chaetoceros decipiens* | 20 | | | | | | |
| *Chaetoceros laciniosus* | 20 | | | | | | 20 |
| *Chaetoceros socialis* | 100 | | | | | | 920 |
| *Chaetoceros spp.* | 100 | 100 | 300 | 220 | 80 | 80 | 440 |
| *Chaetoceros spp.* (phaeoceros) | 20 | 20 | 120 | 20 | | | |
| *Chaetoceros subtilis* | | 20 | | | | | |
| *Corethron criophilum* | 160 | 260 | 340 | 180 | 220 | 60 | 100 |
| *Coscinodiscus spp.* | 60 | | | | 40 | | 20 |
| *Cylindrotheca closterium* | 800 | 420 | 420 | 2840 | 1320 | 500 | 500 |
| *Dactyliosolen fragilissimus* | | | | 20 | | | |
| *Ditylum brightwellii* | 100 | 40 | 100 | 120 | 120 | 20 | 60 |
| *Eucampia zodiacus* | | | 180 | 60 | | | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **08-Sep-98 (continued)** | | | | | | | |
| *Guinardia delicatula* | 1140 | 920 | 2240 | 2000 | 1240 | 420 | 280 |
| *Guinardia flaccida* | | | 20 | 20 | | 40 | |
| *Gyrosigma littorale* | | | | | | | 40 |
| *Gyrosigma tennuissimum* | 20 | | | | | | 80 |
| *Helicotheca tamesis* | | | | | 20 | | |
| *Lauderia annulata* | | | | | | | 60 |
| *Leptocylindrus mediterraneus* | | | | 20 | | | |
| *Leptocylindrus minimus* | 120 | 180 | 100 | 180 | 80 | 100 | 100 |
| *Navicula spp.* | 40 | 20 | | | | 20 | |
| *Paralia marina* | | | | | 20 | | |
| *Pleurosigma angulatum* | 120 | 20 | | 20 | 20 | | 120 |
| *Pseudo-nitzschia delicatissima* group | 1580 | 380 | 520 | 3160 | 1940 | 1760 | 260 |
| *Pseudo-nitzschia seriata* group | 20 | | | | 140 | | |
| *Rhizosolenia spp.* | | 60 | 20 | 80 | 40 | 20 | 40 |
| *Skeletonema costatum* | 980 | 300 | 600 | 660 | 600 | 400 | 1780 |
| *Striatella unipunctata* | | 20 | | | | | |
| *Thalassionema nitzschioides* | | | | | 40 | | |
| *Thalassiosira oestrupii* | | 80 | | 100 | 20 | | |
| *Thalassiosira spp.* | 20 | | | | | | |
| *Triceratium alternans* | | | | | 20 | | |
| Copepoda | 40 | 200 | 20 | | 20 | | |
| *Dictyocha speculum* | 320 | 340 | 260 | 80 | 60 | 20 | 100 |
| Eutreptia / Eutreptiella | 100 | | 160 | 40 | 20 | | 100 |
| *Helicostomella spp.* | 20 | 40 | | | | | 20 |
| *Mesodinium rubrum* | 5020 | 2860 | 1760 | | | 20 | 6800 |
| Tintinnids | 140 | 240 | 440 | 220 | 140 | 100 | 360 |
| **15-Sep-98** | | | | | | | |
| *Alexandrium fundyense* | 20 | 60 | | | | | 20 |
| Armoured dinoflagellate | | | 40 | 60 | 40 | | 40 |
| *Ceratium fusus* | 40 | 20 | 20 | 40 | | | |
| *Ceratium kofoidii* | 20 | | | 40 | | | 20 |
| *Ceratium lineatum* | 120 | | 40 | 20 | 20 | | 140 |
| *Ceratium longipes* | 20 | 20 | 40 | 20 | | | |
| *Ceratium spp.* | | | | | | | 60 |
| *Ceratium tripos* | 80 | 40 | 80 | 60 | 40 | 20 | 80 |
| *Dinophysis acuminata* | | | 20 | 20 | | | |
| *Dinophysis acuta* | | | | 80 | | | 20 |
| *Dinophysis norvegica* | 40 | 40 | | 20 | | | |
| *Dinophysis spp.* | | 20 | | | | | |
| *Gonyaulax spinifera* | 20 | | | | | | |
| *Gyrodinium spp.* | 20 | | | | | 80 | 180 |
| *Heterocapsa triquetra* | | 40 | 180 | 20 | | | |
| *Phalacroma rotundatum* | | | | 20 | | | |
| *Prorocentrum minimum* | | | 20 | | | | |
| *Prorocentrum spp.* | | 40 | | | | | |
| *Protoperidinium spp.* | | 20 | | | | | |
| *Scrippsiella trochoidea* | 60 | 160 | 40 | 60 | | | 120 |
| Unarmoured dinoflagellate | 20 | 20 | 40 | | | | 40 |
| *Actinoptychus senarius* | | | | | 20 | 80 | 80 |
| *Asterionellopsis glacialis* | | | | | 20 | 20 | |
| *Cerataulina pelagica* | | | 20 | | 20 | | 500 |
| *Chaetoceros borealis* | | | | | 20 | | 20 |
| *Chaetoceros constrictus* | 20 | | | | | | |
| *Chaetoceros convolutus* var. *trisetosa* | 20 | | 60 | | 60 | | |
| *Chaetoceros debilis* | 60 | | | | | | 20 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **15-Sep-98 (continued)** | | | | | | | |
| *Chaetoceros decipiens* | 60 | 20 | | | | | |
| *Chaetoceros laciniosus* | | | | | | | 20 |
| *Chaetoceros socialis* | 80 | | | | | | 760 |
| *Chaetoceros spp.* | 80 | 20 | 20 | | | 20 | 140 |
| *Chaetoceros spp.* (phaeoceros) | 20 | | | | | | 20 |
| *Chaetoceros teres* | | 20 | | | | | |
| *Corethron criophilum* | 120 | 160 | | | | 40 | 80 |
| *Coscinodiscus spp.* | | | | | 20 | | 20 |
| *Cylindrotheca closterium* | 220 | 100 | 240 | 760 | 1500 | 280 | 120 |
| *Dactyliosolen fragilissimus* | | | | | | | 80 |
| *Ditylum brightwellii* | | | | 20 | 100 | | 20 |
| *Eucampia zodiacus* | | | | | | | 60 |
| *Guinardia delicatula* | | 20 | 20 | 40 | 100 | 340 | 300 |
| *Guinardia flaccida* | | | | | 20 | | |
| *Gyrosigma tennuissimum* | | | | | | | 20 |
| *Leptocylindrus danicus* | | | | | | 20 | 140 |
| *Leptocylindrus mediterruneus* | | | | | 20 | | |
| *Leptocylindrus minimus* | 40 | | | | 20 | | |
| *Licmophora abbreviata* | | 20 | | | | | |
| *Pleurosigma angulatum* | 20 | | | | | | 40 |
| *Pleurosigma angulatum* var. *strigosa* | | | | | 20 | | |
| *Proboscia alata* | | | | | | 20 | |
| *Pseudo-nitzschia delicatissima* group | 1480 | 360 | 580 | 640 | 1640 | 1060 | 340 |
| *Pseudo-nitzschia seriata* group | | | | | | | 280 |
| *Rhizosolenia spp.* | 20 | | | | | | 100 |
| *Skeletonema costatum* | 100 | | | | 80 | 200 | 480 |
| *Thalassiosira oestrupii* | 40 | | | | 20 | | 20 |
| Copepoda | 80 | 40 | | | | 20 | 80 |
| *Dictyocha speculum* | 20 | 80 | 320 | 100 | 80 | | 80 |
| Eutreptia / Eutreptiella | 80 | 80 | | 100 | 20 | | 20 |
| *Helicostomella spp.* | | | | | | | 60 |
| *Mesodinium rubrum* | 2680 | 860 | 1060 | 40 | | | 4020 |
| Tintinnids | 160 | 40 | 20 | 140 | | | 220 |
| **22-Sep-98** | | | | | | | |
| *Alexandrium fundyense* | 20 | | | | | | |
| Armoured dinoflagellate | 80 | 20 | 20 | 20 | | | 40 |
| *Ceratium fusus* | 40 | 20 | | | | | |
| *Ceratium kofoidii* | 20 | | | | | | |
| *Ceratium lineatum* | 140 | 100 | 40 | 20 | | | 80 |
| *Ceratium longipes* | | 20 | | | | 20 | |
| *Ceratium spp.* | | | 20 | | | | |
| *Ceratium tripos* | 20 | 20 | 120 | 40 | 20 | | 20 |
| *Dinophysis norvegica* | 100 | | 60 | | | | |
| *Dinophysis spp.* | 20 | | | | | | 60 |
| *Gonyaulax spinifera* | 20 | | | | | | |
| *Gyrodinium spp.* | | | | | | | 20 |
| *Heterocapsa triquetra* | 20 | 40 | 180 | | | | |
| *Scrippsiella trochoidea* | 80 | | | 20 | | | 120 |
| Unarmoured dinoflagellate | 20 | 20 | | 20 | | | |
| *Actinoptychus senarius* | | | | 40 | 40 | | |
| *Asterionellopsis glacialis* | 20 | | | | 20 | | |
| *Cerataulina pelagica* | 300 | | | | | | 1520 |
| *Chaetoceros borealis* | 20 | | | | | | |
| *Chaetoceros compressus* | 20 | | | | | | 80 |
| *Chaetoceros constrictus* | | 20 | | | | | 40 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **22-Sep-98 (continued)** | | | | | | | |
| *Chaetoceros debilis* | 80 | | | | 20 | | 120 |
| *Chaetoceros decipiens* | | | | | | | 60 |
| *Chaetoceros laciniosus* | 20 | | | | | | 100 |
| *Chaetoceros lorenzianus* | 20 | | | | | | 20 |
| *Chaetoceros socialis* | | | | | | | 40 |
| *Chaetoceros spp.* | 260 | 20 | | | 20 | | 540 |
| *Chaetoceros spp.* (phaeoceros) | 20 | 20 | 20 | 20 | | | |
| *Corethron criophilum* | 100 | 60 | 20 | 20 | | | 260 |
| *Coscinodiscus spp.* | | | 20 | | | | |
| *Cylindrotheca closterium* | 620 | 340 | 440 | 540 | 300 | 280 | 200 |
| *Ditylum brightwellii* | 60 | 20 | | | 20 | | 60 |
| *Eucampia zodiacus* | 440 | | | | | 20 | 160 |
| *Guinardia delicatula* | 560 | 60 | | 40 | 180 | 80 | 2720 |
| *Guinardia flaccida* | | | | | | 20 | |
| *Gyrosigma fasciola* | 20 | | | | | | |
| *Lauderia annulata* | | | | | | | 240 |
| *Leptocylindrus danicus* | | | | | 20 | | 20 |
| *Leptocylindrus minimus* | 60 | | | 40 | | | 20 |
| *Navicula spp.* | 40 | | | | | | 20 |
| *Pleurosigma / Gyrosigma* | | | | | | 40 | 20 |
| *Pleurosigma angulatum* | 40 | | | | | | 40 |
| *Pseudo-nitzschia delicatissima* group | 880 | 320 | 300 | 500 | 80 | 20 | 280 |
| *Pseudo-nitzschia seriata* group | 300 | 80 | | | 60 | | 660 |
| *Rhizosolenia spp.* | 20 | | | | | | |
| *Skeletonema costatum* | 140 | 60 | | | 80 | 60 | 540 |
| *Thalassiosira oestrupii* | 20 | | 20 | 20 | | | 20 |
| *Thalassiosira spp.* | | | | | | | 20 |
| Copepoda | 40 | 20 | | 20 | | | 20 |
| *Dictyocha speculum* | 80 | 260 | 140 | 60 | 60 | | 40 |
| Eutreptia / Eutreptiella | | 60 | 420 | 40 | | | 180 |
| *Helicostomella spp.* | 20 | | | | 20 | | 20 |
| *Mesodinium rubrum* | 3240 | 5260 | 2720 | 120 | 60 | | 2640 |
| Tintinnids | 320 | 500 | 100 | 80 | | | 140 |
| **29-Sep-98** | | | | | | | |
| Armoured dinoflagellate | 20 | | | | 20 | | 40 |
| *Ceratium fusus* | | | 40 | 40 | | | |
| *Ceratium lineatum* | | | 20 | 40 | | | 80 |
| *Ceratium spp.* | | | | 20 | | | |
| *Ceratium tripos* | | | 80 | | 80 | 40 | |
| *Dinophysis norvegica* | | 20 | | | | | 40 |
| *Gyrodinium spp.* | | | | | | 20 | |
| *Heterocapsa triquetra* | | 40 | 40 | 20 | | | |
| *Scrippsiella trochoidea* | 20 | | | | | | |
| Unarmoured dinoflagellate | | | 40 | | | | |
| *Actinoptychus senarius* | | | 160 | 40 | 120 | 80 | 80 |
| *Cerataulina pelagica* | | | | | 20 | 20 | 400 |
| *Chaetoceros borealis* | | 20 | | 20 | | | |
| *Chaetoceros constrictus* | 60 | | | | | | 80 |
| *Chaetoceros convolutus* | | | | | | 20 | |
| *Chaetoceros convolutus* var. *trisetosa* | | | 20 | 40 | 20 | | |
| *Chaetoceros debilis* | 20 | | | | | | 440 |
| *Chaetoceros decipiens* | | | 20 | | | | |
| *Chaetoceros laciniosus* | | | | | | | 320 |
| *Chaetoceros lorenzianus* | 20 | 20 | | | | | 120 |
| *Chaetoceros socialis* | | | | | | | 480 |
| *Chaetoceros spp.* | 40 | 20 | 20 | | 60 | | 800 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **29-Sep-98 (continued)** | | | | | | | |
| *Chaetoceros spp.* (phaeoceros) | | 20 | 20 | | | | |
| *Corethron criophilum* | 60 | 60 | 20 | 40 | 80 | 60 | 400 |
| *Coscinodiscus spp.* | | | 20 | | 20 | | 40 |
| *Cylindrotheca closterium* | 160 | 40 | 80 | 420 | 640 | 140 | 120 |
| *Dactyliosolen fragilissimus* | | | | | | | 200 |
| *Ditylum brightwellii* | 60 | 40 | | 20 | 20 | 20 | 720 |
| *Eucampia zodiacus* | | | | | | | 760 |
| *Guinardia delicatula* | 560 | 20 | 120 | | 80 | 80 | 8040 |
| *Guinardia flaccida* | | | | 40 | | | |
| *Lauderia annulata* | | | | | | | 240 |
| *Leptocylindrus danicus* | 100 | 20 | | | | | 760 |
| *Leptocylindrus mediterraneus* | | | 60 | | | | |
| *Leptocylindrus minimus* | | | 60 | | 20 | | 80 |
| *Navicula spp.* | | | | | | | 40 |
| *Pleurosigma / Gyrosigma* | | 40 | | | | 60 | |
| *Pleurosigma angulatum* var. *strigosa* | | | | | 20 | | |
| *Pseudo-nitzschia delicatissima* group | 340 | 280 | 860 | 380 | 340 | 160 | 360 |
| *Pseudo-nitzschia seriata* group | 300 | | 40 | | | | 2280 |
| *Rhizosolenia spp.* | | | 20 | | | | 80 |
| *Skeletonema costatum* | | | | 20 | | | 400 |
| *Striatella unipunctata* | | 20 | | | | | |
| *Thalassiosira nordenskioeldii* | | | | | | | 40 |
| *Thalassiosira oestrupii* | 20 | | | | 20 | | |
| Copepoda | 40 | | 20 | 40 | 20 | | |
| *Dictyocha speculum* | 40 | 80 | 60 | | 20 | | 80 |
| Eutreptia / Eutreptiella | | 40 | 120 | | 20 | | 160 |
| *Mesodinium rubrum* | 600 | 620 | 600 | | | 20 | 1400 |
| Tintinnids | 20 | 40 | 20 | 60 | 40 | 20 | 160 |
| **13-Oct-98** | | | | | | | |
| Armoured dinoflagellate | 280 | 40 | | 20 | 80 | 20 | 40 |
| *Ceratium fusus* | | | | 20 | | | |
| *Ceratium kofoidii* | | | | | 20 | | |
| *Ceratium lineatum* | | | 40 | 20 | 40 | 20 | 240 |
| *Ceratium tripos* | 40 | | 20 | 20 | | | |
| *Dinophysis acuminata* | | | 20 | | 20 | | |
| *Dinophysis norvegica* | 40 | 20 | | | | | 40 |
| *Dinophysis spp.* | 40 | | 20 | | | | |
| *Protoperidinium spp.* | | | | | | | 120 |
| *Scrippsiella trochoidea* | 80 | | | | | | 160 |
| Unarmoured dinoflagellate | | | | 20 | 20 | | |
| *Actinoptychus senarius* | 280 | 200 | 20 | 240 | 60 | 180 | |
| *Asterionellopsis glacialis* | 80 | | | | 20 | 20 | 80 |
| *Cerataulina pelagica* | | 20 | | | | | |
| *Chaetoceros borealis* | | | | | | 20 | |
| *Chaetoceros compressus* | 40 | 20 | | | | 20 | |
| *Chaetoceros constrictus* | | 20 | | | | 20 | |
| *Chaetoceros convolutus* | | | | 20 | 40 | | |
| *Chaetoceros convolutus* var. *trisetosa* | 40 | 60 | 20 | | 40 | 20 | |
| *Chaetoceros debilis* | 360 | 140 | 60 | 80 | 180 | 40 | 2120 |
| *Chaetoceros decipiens* | | 40 | | | | | |
| *Chaetoceros didymus* | | | | | | | 40 |
| *Chaetoceros laciniosus* | | | | | | | 120 |
| *Chaetoceros lorenzianus* | 40 | | | 40 | | 40 | 160 |
| *Chaetoceros socialis* | | | | | 60 | | |
| *Chaetoceros spp.* | 200 | 100 | 40 | | 100 | | 400 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **13-Oct-98 (continued)** | | | | | | | |
| *Chaetoceros spp.* (phaeoceros) | | | | 80 | | | 40 |
| *Corethron criophilum* | 160 | 20 | 160 | 160 | 260 | 80 | 440 |
| *Coscinodiscus spp.* | | | 120 | 60 | 80 | 100 | |
| *Cylindrotheca closterium* | 480 | 520 | 200 | 520 | 680 | 740 | 200 |
| *Dactyliosolen fragilissimus* | | | 20 | | | 60 | 600 |
| *Ditylum brightwellii* | 1200 | 2400 | 2280 | 2000 | 2040 | 2180 | 520 |
| *Eucampia zodiacus* | 40 | 100 | | | | 20 | 880 |
| *Guinardia delicatula* | 440 | 400 | 160 | 260 | 360 | 200 | 160 |
| *Guinardia flaccida* | | | | | | 40 | 240 |
| *Gyrosigma littorale* | 40 | 40 | | | | | |
| *Gyrosigma tennuissimum* | | 60 | | | | 20 | |
| *Helicotheca tamesis* | | | | 20 | | 20 | |
| *Lauderia annulata* | 840 | 60 | | | 20 | 60 | 6480 |
| *Leptocylindrus danicus* | 6480 | 1620 | 100 | 40 | 220 | 1840 | 70140 |
| *Leptocylindrus mediterraneus* | | | | | 40 | | |
| *Leptocylindrus minimus* | 320 | 60 | | 100 | 40 | 60 | 680 |
| *Navicula spp.* | | | | 20 | | 20 | |
| *Paralia marina* | | | | 20 | 20 | 20 | |
| *Pleurosigma angulatum* var. *strigosa* | | 20 | | | | | |
| *Pseudo-nitzschia delicatissima* group | 3640 | 4340 | 3520 | 3660 | 5540 | 6840 | 40 |
| *Pseudo-nitzschia seriata* group | | 60 | 160 | 160 | 260 | 400 | 440 |
| *Rhizosolenia spp.* | | | 20 | 20 | | | 160 |
| *Skeletonema costatum* | 120 | 60 | 20 | 160 | 80 | 100 | 80 |
| *Thalassiosira baltica* | | 20 | | | | 40 | |
| *Thalassiosira oestrupii* | | 20 | | | | | |
| *Thalassiosira spp.* | | 20 | | 40 | | 80 | 120 |
| *Triceratium alternans* | | | | | | 20 | |
| Copepoda | | 40 | | 20 | 20 | | |
| *Dictyocha speculum* | 40 | | 20 | 40 | 40 | | 200 |
| Eutreptia / Eutreptiella | | 20 | 60 | 60 | 40 | 20 | 360 |
| *Mesodinium rubrum* | 1000 | 280 | 1300 | 340 | | | 2760 |
| *Parafavella spp.* | | | | | | 20 | |
| Tintinnids | 160 | 20 | 260 | 80 | 100 | 20 | 120 |
| **26-Oct-98** | | | | | | | |
| *Alexandrium fundyense* | | | | | | | 40 |
| Armoured dinoflagellate | 40 | | 160 | 40 | | 20 | 120 |
| *Ceratium fusus* | | | 40 | | | | |
| *Ceratium lineatum* | 120 | | 160 | 40 | | | |
| *Ceratium longipes* | | | | 40 | | | |
| *Ceratium tripos* | | 80 | 40 | | | | |
| *Dinophysis acuminata* | | | | 40 | | | |
| *Heterocapsa triquetra* | 40 | | 40 | | | | |
| *Prorocentrum micans* | | | | | | | 40 |
| *Protoperidinium spp.* | | | 40 | | | | |
| Unarmoured dinoflagellate | | | | | | | 40 |
| *Actinoptychus senarius* | | 480 | 160 | | 120 | 260 | 160 |
| *Asterionellopsis glacialis* | | | | | | | 40 |
| *Cerataulina pelagica* | | 40 | | | 40 | 20 | 40 |
| *Chaetoceros compressus* | 40 | 40 | | | | | |
| *Chaetoceros convolutus* | | | 40 | | | | |
| *Chaetoceros debilis* | 560 | 600 | 1000 | 400 | 720 | 240 | 1600 |
| *Chaetoceros decipiens* | | 40 | 40 | | | | |
| *Chaetoceros ingolfianus* | | | | | 40 | | |
| *Chaetoceros laciniosus* | | 40 | | | | | |
| *Chaetoceros lorenzianus* | 80 | 40 | | | | | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **26-Oct-98 (continued)** | | | | | | | |
| *Chaetoceros socialis* | | | | 40 | 120 | 40 | 80 |
| *Chaetoceros spp.* | 40 | 120 | 240 | | 80 | 20 | 240 |
| *Chaetoceros spp.* (phaeoceros) | 40 | | | | | | |
| *Corethron criophilum* | 320 | 80 | 320 | 280 | 320 | 80 | 200 |
| *Coscinodiscus spp.* | 40 | | | | 80 | 20 | |
| *Cylindrotheca closterium* | 240 | 320 | 840 | 400 | 760 | 240 | 400 |
| *Dactyliosolen fragilissimus* | | | | 80 | 120 | | |
| *Ditylum brightwellii* | 2240 | 1880 | 4440 | 2920 | 2760 | 640 | 2120 |
| *Eucampia zodiacus* | 40 | | 200 | 80 | | 40 | 680 |
| *Guinardia delicatula* | 400 | 240 | 480 | 360 | 240 | 140 | 40 |
| *Guinardia flaccida* | 200 | 200 | | | 200 | 20 | 320 |
| *Lauderia annulata* | 5800 | 2480 | 4200 | 2840 | 1560 | 860 | 10160 |
| *Leptocylindrus danicus* | 6480 | 6840 | 16560 | 12280 | 7320 | 2680 | 5880 |
| *Leptocylindrus minimus* | 480 | 120 | 80 | | 40 | 80 | 1320 |
| *Navicula spp.* | 40 | | | | | 60 | 80 |
| *Pleurosigma / Gyrosigma* | | | | | | 20 | |
| *Pleurosigma angulatum* | | 40 | | | | | |
| *Pleurosigma angulatum* var. *strigosa* | | 40 | | | | | 40 |
| *Porosira glacialis* | | | | | | 20 | |
| *Pseudo-nitzschia delicatissima* group | 2320 | 5880 | 3880 | 3920 | 4880 | 1860 | 1040 |
| *Pseudo-nitzschia seriata* group | 120 | | 120 | 40 | 160 | | 80 |
| *Rhizosolenia spp.* | 40 | | 40 | | | | 80 |
| *Skeletonema costatum* | 80 | 40 | 160 | 80 | 160 | 60 | 360 |
| *Thalassionema nitzschioides* | | | | 80 | | 40 | |
| *Thalassiosira spp.* | 80 | 80 | 120 | 160 | 40 | | 80 |
| *Dictyocha speculum* | 120 | | 80 | | | | 40 |
| Eutreptia / Eutreptiella | 40 | 80 | 200 | 160 | 40 | | 640 |
| *Mesodinium rubrum* | 2200 | 1200 | 1800 | | 80 | | 2160 |
| Tintinnids | 80 | 40 | 80 | | 40 | 40 | 80 |
| **10-Nov-98** | | | | | | | |
| Armoured dinoflagellate | 40 | | 80 | 80 | 20 | | 40 |
| *Ceratium fusus* | | | | | | 20 | |
| *Ceratium lineatum* | | 80 | 20 | | | | 20 |
| *Ceratium minutum* | | | 20 | | | | |
| *Ceratium spp.* | | | | 20 | | | |
| *Ceratium tripos* | | | | 60 | | | |
| *Dinophysis norvegica* | | | | 20 | | | |
| *Dinophysis spp.* | | | | | | 20 | |
| *Gyrodinium spp.* | | 40 | | | | | 380 |
| Unarmoured dinoflagellate | | | | | 20 | | 20 |
| *Actinoptychus senarius* | 220 | 160 | 180 | 320 | 160 | 540 | |
| *Asterionellopsis glacialis* | | 40 | 80 | 60 | 60 | | |
| *Cerataulina pelagica* | 20 | 40 | | | | 20 | |
| *Chaetoceros borealis* | | | | 60 | 20 | 20 | |
| *Chaetoceros compressus* | | | | | 20 | 20 | |
| *Chaetoceros concavicornis* | | | | | | 20 | |
| *Chaetoceros constrictus* | | | | | | | 20 |
| *Chaetoceros debilis* | 380 | 1200 | 1000 | 720 | 800 | 720 | 20 |
| *Chaetoceros decipiens* | | 160 | 60 | 20 | 20 | | |
| *Chaetoceros ingolfianus* | | | | | 20 | | |
| *Chaetoceros lorenzianus* | | | | 40 | | | |
| *Chaetoceros socialis* | 160 | 200 | 40 | 20 | 80 | | 140 |
| *Chaetoceros spp.* | | | | 20 | 20 | 20 | |
| *Chaetoceros spp.* (phaeoceros) | 20 | | 20 | | | | 20 |
| *Corethron criophilum* | 20 | | 100 | 60 | 120 | 80 | |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **10-Nov-98 (continued)** | | | | | | | |
| *Coscinodiscus spp.* | 100 | 80 | 40 | 40 | 40 | 20 | |
| *Cylindrotheca closterium* | 440 | 1160 | 460 | 360 | 220 | 280 | 640 |
| *Ditylum brightwellii* | 20 | | 100 | 260 | 120 | 80 | |
| *Eucampia zodiacus* | 1300 | 480 | 260 | 40 | 140 | 180 | 2560 |
| *Guinardia delicatula* | 80 | 200 | 140 | 180 | 280 | 200 | |
| *Guinardia flaccida* | 40 | | | 20 | | 20 | |
| *Gyrosigma tennuissimum* | | | | | | | 20 |
| *Leptocylindrus danicus* | 100 | 4200 | 100 | 160 | | | 40 |
| *Leptocylindrus mediterraneus* | 20 | | | 20 | 20 | | |
| *Leptocylindrus minimus* | | 80 | | | | | 20 |
| *Navicula spp.* | | | 20 | 60 | 40 | 120 | |
| *Odontella regia* | | | | 20 | | 20 | |
| *Paralia marina* | | | | 20 | | 20 | |
| *Pleurosigma / Gyrosigma* | | | | 20 | | | 20 |
| *Pleurosigma angulatum* var. *strigosa* | | | | | 80 | | |
| *Pseudo-nitzschia delicatissima* group | 2200 | 6640 | 4180 | 3700 | 3140 | 3720 | 480 |
| *Pseudo-nitzschia seriata* group | 80 | 1000 | 560 | 300 | 840 | 680 | 80 |
| *Skeletonema costatum* | 40 | | 20 | | 40 | 40 | 20 |
| *Thalassionema nitzschioides* | | | | 20 | 20 | | |
| *Thalassiosira baltica* | | | | 40 | 140 | 40 | |
| *Thalassiosira gravida* | | | | 20 | | 40 | |
| *Thalassiosira spp.* | 20 | 80 | 60 | 60 | 60 | | |
| Copepoda | 20 | | | | | | |
| *Dictyocha speculum* | | | 20 | | 40 | | 20 |
| Eutreptia / Eutreptiella | 60 | 120 | 20 | | 60 | 20 | |
| *Mesodinium rubrum* | 660 | 720 | 1240 | 80 | | | 1640 |
| Tintinnids | 120 | 40 | 120 | | | 40 | 40 |
| **08-Dec-98** | | | | | | | |
| Armoured dinoflagellate | 20 | 20 | | 20 | | | |
| *Ceratium fusus* | 20 | | | | | 20 | |
| *Ceratium lineatum* | 20 | 20 | | | | | |
| *Ceratium tripos* | | | | | | | 20 |
| *Phalacroma rotundatum* | 20 | | | | | | |
| Unarmoured dinoflagellate | 20 | | | | | | 20 |
| *Actinoptychus senarius* | 220 | | 40 | 400 | | 60 | 40 |
| *Asterionellopsis glacialis* | | 40 | | 20 | | | |
| *Cerataulina pelagica* | | | | | | | 80 |
| *Chaetoceros borealis* | 20 | | | | | | |
| *Chaetoceros compressus* | | 20 | | | | | |
| *Chaetoceros convolutus* | | | 20 | | | | 20 |
| *Chaetoceros debilis* | 20 | | 60 | | | 20 | |
| *Chaetoceros decipiens* | | 20 | | | | | 20 |
| *Chaetoceros socialis* | 200 | 20 | 40 | 60 | 20 | 60 | 160 |
| *Chaetoceros spp.* | | 20 | 20 | | | 20 | 40 |
| *Corethron criophilum* | 20 | | | 40 | | | |
| *Coscinodiscus spp.* | 20 | 60 | 20 | 100 | 60 | | 40 |
| *Cylindrotheca closterium* | 240 | 440 | 320 | 560 | 500 | 600 | 580 |
| *Ditylum brightwellii* | 40 | 20 | | 20 | | 40 | 40 |
| *Eucampia zodiacus* | 1900 | 180 | 1580 | 700 | 420 | 480 | 1500 |
| *Grammatophora marina* | | 20 | | | | | |
| *Guinardia delicatula* | 40 | 20 | 20 | | | 20 | 20 |
| *Guinardia striata* | 20 | | | | | | |
| *Gyrosigma fasciola* | | | | | | | 20 |
| *Licmophora abbreviata* | | | | | | 20 | |
| *Navicula spp.* | 20 | 40 | | 120 | 80 | 60 | 100 |

| ORGANISM | 3 | 15 | 16-0m | 16-10m | 16-25m | 16-50m | 17 |
|---|---|---|---|---|---|---|---|
| **08-Dec-98 (continued)** | | | | | | | |
| *Paralia marina* | | 40 | | | 40 | 40 | |
| *Pleurosigma / Gyrosigma* | 20 | 20 | | | | | |
| *Pleurosigma angulatum* | 20 | | | | | 20 | |
| *Pleurosigma angulatum* var. *strigosa* | 100 | | 60 | | 20 | 40 | |
| *Pseudo-nitzschia delicatissima* group | 1260 | 2960 | 1340 | 1480 | 980 | 1000 | 1260 |
| *Pseudo-nitzschia seriata* group | 40 | | | 20 | | | 20 |
| *Rhabdonema spp.* | | | | | | 20 | |
| *Skeletonema costatum* | 80 | 20 | | 80 | 40 | 60 | 20 |
| *Thalassiosira baltica* | 20 | | 20 | | 20 | 20 | |
| *Thalassiosira spp.* | | | | 60 | 20 | 20 | 20 |
| Copepoda | 20 | | 20 | | | 20 | |
| *Dictyocha speculum* | | | | | | 20 | |
| Eutreptia / Eutreptiella | | | | | | 20 | |
| *Mesodinium rubrum* | 80 | 80 | 240 | 140 | | | 540 |
| *Salpingella spp.* | | | | | | | 20 |
| Tintinnids | 40 | | 20 | | 20 | | 140 |

**Appendix 3. Plant nutrient, temperature and salinity data during 1997-98.**

| Date mm/dd/yy | Temp. Surface | Temp. Bottom | Salinity Surface | Salinity Bottom | Silicate Surface | Phosphate Surface | Nitrates Surface | Ammonia Surface | Nitrite Surface |
|---|---|---|---|---|---|---|---|---|---|
| **Station 3** | | | | | | | | | |
| 01/20/97 | 2.1 | 2.9 | 31.33 | 31.34 | | | | | |
| 02/24/97 | 1.0 | 2.1 | 31.29 | 31.26 | | | | | |
| 03/19/97 | 1.3 | 2.3 | 31.14 | 31.61 | | | | | |
| 04/22/97 | 3.4 | 3.6 | 30.98 | 31.00 | | | | | |
| 05/13/97 | 6.2 | 4.8 | 30.46 | 30.79 | | | | | |
| 05/20/97 | 6.2 | 5.0 | 27.62 | 30.27 | | | | | |
| 06/03/97 | 7.0 | 5.8 | 30.95 | 30.70 | | | | | |
| 06/10/97 | 9.6 | 6.4 | 29.80 | 30.62 | | | | | |
| 06/17/97 | 8.8 | 6.7 | 30.67 | 31.05 | | | | | |
| 06/23/97 | 8.9 | 8.1 | 31.06 | 31.10 | 0.86 | 0.505 | 1.59 | 2.79 | 0.17 |
| 07/09/97 | 11.9 | 9.7 | 31.04 | 31.20 | | | | | |
| 07/14/97 | 12.0 | 9.6 | 31.05 | 31.20 | 3.69 | 0.782 | 2.00 | 3.64 | 0.18 |
| 07/21/97 | 11.2 | 10.3 | 31.32 | 31.34 | 4.08 | 0.750 | 3.03 | 3.61 | 0.22 |
| 07/28/97 | 12.8 | | | | 4.53 | 0.747 | 2.65 | 3.56 | 0.22 |
| 08/05/97 | 12.1 | 11.5 | 31.60 | 31.63 | 4.66 | 0.802 | 2.78 | 4.64 | 0.25 |
| 08/10/97 | 13.1 | 12.2 | 31.45 | 31.54 | 5.68 | 0.602 | 2.77 | 6.06 | 0.32 |
| 08/19/97 | 13.0 | 12.2 | 31.72 | 31.74 | 5.25 | 0.806 | 2.67 | 4.60 | 0.21 |
| 08/26/97 | 13.3 | 11.7 | 31.81 | 31.97 | 6.88 | 0.952 | 4.16 | | 0.35 |
| 09/03/97 | 13.5 | | | | 3.42 | 0.783 | 2.26 | 4.11 | 0.29 |
| 09/15/97 | 13.9 | 13.2 | 31.87 | 31.89 | 3.06 | 0.813 | 2.26 | | 0.32 |
| 10/01/97 | 11.8 | 11.8 | 32.27 | 32.28 | 6.71 | 1.022 | 5.68 | 4.88 | 0.56 |
| 10/14/97 | 11.6 | | | | 7.65 | 1.059 | 6.55 | 4.93 | 0.56 |
| 11/12/97 | 9.4 | 9.6 | 32.37 | 32.37 | 8.31 | 1.127 | 7.52 | | 0.43 |
| 12/09/97 | 6.0 | 6.1 | 31.61 | 32.27 | 7.69 | 0.981 | 7.90 | 3.34 | 0.23 |
| 01/20/98 | 3.3 | 2.9 | 31.82 | 31.82 | 7.52 | 0.907 | 7.36 | 4.04 | 0.17 |
| 02/10/98 | 2.2 | 2.1 | 31.50 | 31.50 | 7.35 | 0.838 | 6.46 | 4.13 | 0.13 |
| 03/26/98 | 2.0 | 2.2 | 29.59 | 30.05 | 11.04 | 0.810 | 7.62 | 2.48 | 0.17 |
| 04/21/98 | 5.8 | 4.4 | 29.82 | 30.47 | 11.15 | 1.019 | 7.51 | 5.23 | 0.24 |
| 05/12/98 | 7.8 | | | | 9.72 | 0.765 | 6.96 | 6.72 | 0.25 |
| 05/19/98 | 8.3 | 6.7 | 29.91 | 30.31 | 5.74 | 0.778 | 4.44 | 5.21 | 0.25 |
| 05/26/98 | 7.2 | 6.4 | 30.86 | 30.92 | 2.51 | 0.623 | 3.60 | 6.04 | 0.22 |
| 06/02/98 | 9.2 | 7.1 | 30.90 | 31.08 | 0.74 | 0.524 | 0.53 | 3.07 | 0.13 |
| 06/09/98 | 8.5 | 7.8 | 30.95 | 31.06 | 1.84 | 0.569 | 2.96 | 3.56 | 0.21 |
| 06/16/98 | 10.3 | | | | 2.54 | 0.550 | 2.52 | 2.89 | 0.09 |
| 06/23/98 | 9.8 | 9.0 | 30.96 | 31.02 | 3.22 | 0.617 | 3.11 | | 0.26 |
| 06/29/98 | 10.1 | 9.2 | 31.04 | 31.15 | 3.59 | 0.651 | 3.39 | 5.57 | 0.23 |
| 07/07/98 | 11.0 | 10.6 | 31.29 | 31.26 | 3.42 | 0.581 | 3.39 | 2.88 | 0.18 |
| 07/14/98 | 11.9 | 9.8 | 31.31 | 31.16 | 4.01 | 0.627 | 3.28 | 4.98 | 0.19 |
| 07/21/98 | 11.7 | 10.7 | 31.41 | 31.42 | 3.97 | 0.674 | 3.70 | 3.05 | 0.24 |
| 07/28/98 | 12.8 | 10.6 | 31.41 | 31.54 | 3.86 | 0.754 | 2.98 | 4.66 | 0.27 |
| 08/04/98 | 13.3 | 11.4 | 31.62 | 31.50 | 1.86 | 0.661 | 0.68 | 3.10 | 0.14 |

| Date mm/dd/yy | Temp. Surface | Temp. Bottom | Salinity Surface | Salinity Bottom | Silicate Surface | Phosphate Surface | Nitrates Surface | Ammonia Surface | Nitrite Surface |
|---|---|---|---|---|---|---|---|---|---|
| **Station 3** | | | | | | | | | |
| 08/11/98 | 12.2 | 11.7 | 31.58 | 31.61 | 1.53 | 0.596 | 1.12 | 4.33 | 0.13 |
| 08/18/98 | 13.0 | 11.8 | 31.57 | 31.68 | 2.26 | 0.588 | 1.23 | 3.62 | 0.19 |
| 08/25/98 | 12.5 | 11.9 | 31.76 | 31.77 | 2.08 | 0.617 | 1.41 | 3.23 | 0.17 |
| 09/01/98 | 15.0 | 12.4 | 31.38 | 31.79 | 1.95 | 0.644 | 0.86 | 3.20 | 0.19 |
| 09/08/98 | 13.0 | 12.5 | 31.75 | 31.78 | 4.22 | 0.739 | 3.20 | 4.02 | 0.31 |
| 09/15/98 | 12.5 | 11.8 | 31.91 | 31.94 | 5.67 | 0.931 | 4.49 | 4.92 | 0.29 |
| 09/22/98 | 12.0 | 11.5 | 32.03 | 32.08 | 7.29 | 0.953 | 5.87 | 3.41 | 0.31 |
| 09/29/98 | 12.0 | 11.4 | 31.76 | 32.03 | 8.41 | 1.036 | 6.26 | 5.09 | 0.36 |
| 10/13/98 | 10.2 | 10.1 | 31.98 | 32.07 | 8.04 | 1.003 | 7.25 | 4.84 | 0.32 |
| 10/26/98 | 9.5 | 9.4 | 32.12 | 32.21 | 7.87 | 0.981 | 6.97 | 5.60 | 0.33 |
| 11/10/98 | 8.5 | 8.4 | 32.28 | 32.29 | 7.73 | 0.930 | 7.83 | 3.73 | 0.29 |
| 12/08/98 | 6.8 | 6.7 | 32.13 | 32.14 | 8.86 | 1.096 | 9.53 | 4.10 | 0.26 |
| **Station 15** | | | | | | | | | |
| 01/20/97 | 2.5 | 3.1 | 31.49 | 31.53 | | | | | |
| 02/24/97 | 2.0 | 2.0 | 31.28 | 31.39 | | | | | |
| 03/19/97 | 1.7 | 2.6 | 31.59 | 31.69 | | | | | |
| 04/22/97 | 3.5 | 3.3 | 30.57 | 30.86 | | | | | |
| 05/13/97 | 6.8 | 4.2 | 30.11 | 31.14 | | | | | |
| 05/20/97 | 6.1 | 4.4 | 27.10 | 30.99 | | | | | |
| 06/03/97 | 7.9 | 5.3 | 29.15 | 30.89 | | | | | |
| 06/10/97 | 9.0 | 5.8 | 29.62 | 30.75 | | | | | |
| 06/17/97 | 8.5 | 6.2 | 30.83 | 31.15 | | | | | |
| 06/23/97 | 10.0 | 7.1 | 30.93 | 31.26 | 0.44 | 0.419 | 0.23 | 3.74 | 0.12 |
| 07/09/97 | 10.8 | 8.9 | 31.11 | 31.26 | | | | | |
| 07/14/97 | 12.6 | 9.4 | 30.73 | 31.28 | 2.53 | 0.641 | 1.86 | 3.05 | 0.18 |
| 07/21/97 | 11.7 | 9.6 | 31.26 | 31.38 | 3.59 | 0.693 | 2.95 | | 0.22 |
| 07/28/97 | 12.1 | | | | 3.67 | 0.655 | 1.32 | 3.32 | 0.16 |
| 08/05/97 | 12.2 | | | | 4.11 | 0.485 | 2.35 | 4.33 | 0.20 |
| 08/10/97 | 13.0 | 10.8 | 31.49 | 31.75 | 4.10 | | 0.91 | 2.42 | 0.16 |
| 08/19/97 | 13.0 | 11.8 | 31.57 | 31.78 | 4.35 | 0.617 | 1.32 | 2.92 | 0.16 |
| 08/26/97 | 12.7 | 11.4 | 31.96 | 32.00 | 6.51 | 0.858 | 4.71 | 3.81 | 0.34 |
| 09/03/97 | 14.1 | | | | 0.74 | 0.476 | 0.17 | 4.58 | 0.09 |
| 09/15/97 | 13.9 | 13.1 | 31.71 | 31.87 | 3.75 | 0.603 | 2.80 | 6.04 | 0.37 |
| 10/01/97 | 12.0 | 11.7 | 32.32 | 32.32 | 5.53 | 0.897 | 4.62 | 3.03 | 0.51 |
| 10/14/97 | 11.3 | | | | 6.95 | 0.844 | 5.60 | 6.38 | 0.49 |
| 11/12/97 | 9.6 | 9.7 | 32.38 | 31.04 | 6.49 | 0.867 | 7.18 | 3.32 | 0.32 |
| 12/09/97 | 5.6 | 5.4 | 31.95 | 32.23 | 7.89 | 0.916 | 7.74 | 5.66 | 0.23 |
| 01/20/98 | 3.7 | 3.0 | 31.73 | 31.85 | 7.25 | 0.875 | 7.35 | 2.94 | 0.18 |
| 02/10/98 | 2.5 | 2.2 | 31.52 | 31.53 | 7.92 | 0.838 | 7.27 | 5.20 | 0.13 |
| 03/26/98 | 2.3 | 3.0 | 29.20 | 31.28 | 11.46 | 0.770 | 8.03 | 4.15 | 0.16 |
| 04/21/98 | 5.0 | 4.5 | 30.20 | 30.38 | 9.72 | 0.826 | 7.68 | 2.02 | 0.20 |

| Date mm/dd/yy | Temp. Surface | Temp. Bottom | Salinity Surface | Salinity Bottom | Silicate Surface | Phosphate Surface | Nitrates Surface | Ammonia Surface | Nitrite Surface |
|---|---|---|---|---|---|---|---|---|---|
| **Station 15** | | | | | | | | | |
| 05/12/98 | 7.2 | | | | 8.69 | 0.671 | 6.12 | | 0.24 |
| 05/19/98 | 9.5 | 5.5 | 29.57 | 30.84 | 1.76 | 0.523 | 0.61 | 4.89 | 0.14 |
| 05/26/98 | 7.8 | 5.9 | 30.89 | 31.12 | 1.36 | 0.453 | 1.22 | 2.87 | 0.15 |
| 06/02/98 | 8.5 | 6.9 | 31.11 | 31.13 | 0.69 | 0.418 | 0.24 | 2.48 | 0.13 |
| 06/09/98 | 8.5 | 7.8 | 30.85 | 31.14 | 1.89 | 0.565 | 2.87 | 3.64 | 0.18 |
| 06/16/98 | 9.3 | 8.7 | 30.75 | 30.79 | 2.05 | 0.498 | 2.39 | 3.18 | 0.06 |
| 06/23/98 | 10.5 | 8.9 | 30.89 | 31.02 | 2.95 | 0.688 | 2.58 | 4.17 | 0.18 |
| 06/29/98 | 10.8 | 8.1 | 31.23 | 31.30 | 3.67 | 0.639 | 3.68 | 4.07 | 0.23 |
| 07/07/98 | 13.0 | 9.3 | 31.09 | 31.42 | 2.75 | 0.441 | 1.66 | 1.71 | 0.11 |
| 07/14/98 | 13.0 | 10.5 | 31.10 | 31.18 | 3.04 | 0.522 | 2.57 | 2.62 | 0.17 |
| 07/21/98 | 12.5 | 10.5 | 31.37 | 31.42 | 3.32 | 0.521 | 2.77 | 3.01 | 0.21 |
| 07/28/98 | 12.8 | 9.9 | 31.47 | 31.72 | 3.32 | 0.576 | 2.32 | 3.80 | 0.23 |
| 08/04/98 | 13.5 | 10.6 | 31.51 | 31.70 | 0.86 | 0.434 | 0.15 | 3.35 | 0.11 |
| 08/11/98 | 14.0 | 10.8 | 31.47 | 31.62 | 0.92 | 0.504 | 0.24 | 2.86 | 0.08 |
| 08/18/98 | 13.5 | 11.3 | 31.61 | 31.72 | 1.36 | 0.405 | 0.25 | 5.81 | 0.21 |
| 08/25/98 | 14.2 | 11.5 | 31.72 | 31.79 | 1.20 | 0.467 | 0.15 | 2.92 | 0.11 |
| 09/01/98 | 14.8 | 11.8 | 31.96 | 32.22 | 2.30 | 0.447 | 0.42 | 2.65 | 0.15 |
| 09/08/98 | 13.0 | 12.0 | 31.69 | 31.87 | 4.06 | 0.761 | 3.08 | 4.14 | 0.29 |
| 09/15/98 | 12.5 | 11.4 | 31.94 | 32.00 | 5.98 | 0.971 | 4.94 | 3.65 | 0.32 |
| 09/22/98 | 12.8 | 11.6 | 31.97 | 32.05 | 6.95 | 0.920 | 4.27 | 4.01 | 0.25 |
| 09/29/98 | 12.3 | 11.2 | 31.76 | 32.11 | 8.81 | 0.866 | 5.26 | 4.86 | 0.30 |
| 10/13/98 | 10.0 | 10.0 | 32.00 | 32.10 | 8.22 | 0.835 | 7.17 | 3.45 | 0.32 |
| 10/26/98 | 9.5 | 9.2 | 32.34 | 32.34 | 8.25 | 0.951 | 8.05 | 4.33 | 0.36 |
| 11/10/98 | 8.2 | 7.9 | 32.34 | 32.33 | 7.65 | 0.891 | 7.26 | 2.75 | 0.28 |
| 12/08/98 | 6.8 | 6.2 | 32.23 | 32.20 | 9.09 | 1.102 | 9.17 | 3.77 | 0.24 |
| **Station 17** | | | | | | | | | |
| 01/20/97 | 1.0 | 3.0 | 30.10 | 30.70 | | | | | |
| 02/24/97 | 0.8 | 1.5 | 29.72 | 30.16 | | | | | |
| 03/19/97 | 0.4 | 1.5 | 29.80 | 30.67 | | | | | |
| 04/22/97 | 3.9 | 3.7 | 29.41 | 30.66 | | | | | |
| 05/13/97 | 5.6 | 5.5 | 28.63 | 28.79 | | | | | |
| 05/20/97 | 6.9 | 5.5 | 23.85 | 29.32 | | | | | |
| 06/03/97 | 8.6 | 6.5 | 28.38 | 29.94 | | | | | |
| 06/10/97 | 9.3 | 8.6 | 28.52 | 28.85 | | | | | |
| 06/17/97 | 9.0 | 8.2 | 29.98 | 30.31 | | | | | |
| 06/23/97 | 9.9 | 9.6 | 30.05 | 30.11 | 1.99 | 0.452 | 1.68 | | 0.18 |
| 07/09/97 | 12.8 | 11.1 | 29.23 | 30.58 | | | | | |
| 07/14/97 | 13.9 | 10.1 | 30.68 | 31.16 | 3.33 | 0.559 | 0.86 | 4.55 | 0.12 |
| 07/21/97 | 12.5 | 11.7 | 29.71 | 30.23 | 5.52 | 0.659 | 1.10 | | 0.17 |
| 07/28/97 | 12.8 | 11.4 | 30.60 | 31.26 | 6.02 | 0.746 | 2.15 | 3.78 | 0.20 |
| 08/05/97 | 13.0 | 12.6 | 30.93 | 30.85 | 6.90 | 0.795 | 3.23 | | 0.28 |

| Date mm/dd/yy | Temp. Surface | Temp. Bottom | Salinity Surface | Salinity Bottom | Silicate Surface | Phosphate Surface | Nitrates Surface | Ammonia Surface | Nitrite Surface |
|---|---|---|---|---|---|---|---|---|---|
| **Station 17** | | | | | | | | | |
| 08/10/97 | 15.5 | 12.0 | 30.78 | 31.43 | 7.45 | 0.524 | 3.70 | 5.76 | 0.37 |
| 08/19/97 | 13.8 | 13.3 | 30.58 | 30.72 | 5.85 | 0.819 | 3.09 | 4.06 | 0.29 |
| 08/26/97 | 13.2 | 12.1 | 30.99 | 31.83 | 6.34 | 0.777 | 3.55 | 4.71 | 0.24 |
| 09/03/97 | 14.0 | | | | 7.81 | 0.809 | 4.25 | 3.42 | 0.34 |
| 09/15/97 | 13.8 | 13.0 | 30.90 | 31.63 | 8.03 | 0.883 | 4.39 | | 0.39 |
| 10/01/97 | 12.5 | 12.3 | 29.94 | 31.29 | 8.59 | 0.956 | 5.90 | 5.78 | 0.58 |
| 10/14/97 | 11.3 | | | | 8.12 | 0.954 | 6.81 | | 0.71 |
| 11/12/97 | 9.0 | 9.2 | 31.70 | 31.71 | 8.67 | 1.020 | 7.42 | | 0.49 |
| 12/09/97 | 5.3 | 5.6 | 31.60 | 31.79 | 8.13 | 0.979 | 8.05 | 5.01 | 0.26 |
| 01/20/98 | 3.3 | 2.4 | 30.96 | 31.53 | 9.62 | 0.948 | 7.91 | 3.84 | 0.17 |
| 02/10/98 | 1.0 | 1.4 | 29.91 | 30.46 | 11.94 | 0.791 | 7.17 | 4.00 | 0.15 |
| 03/26/98 | 2.0 | 2.2 | 28.09 | 29.18 | 14.60 | 0.705 | 6.48 | 3.06 | 0.14 |
| 04/21/98 | 5.2 | 4.8 | 27.37 | 29.58 | 13.43 | 0.725 | 6.36 | 3.66 | 0.22 |
| 05/12/98 | 8.0 | 6.3 | 28.63 | 29.58 | 10.54 | 0.689 | 6.42 | 5.29 | 0.24 |
| 05/19/98 | 8.3 | 6.8 | 28.57 | 29.85 | 6.97 | 0.673 | 4.95 | | 0.26 |
| 05/26/98 | 9.0 | 7.6 | 29.13 | 29.98 | 3.50 | 0.604 | 3.49 | 5.44 | 0.19 |
| 06/02/98 | 9.2 | 7.7 | 29.37 | 30.54 | 1.35 | 0.497 | 0.94 | 3.76 | 0.14 |
| 06/09/98 | 9.1 | 8.4 | 29.78 | 30.31 | 1.87 | 0.535 | 1.66 | 3.53 | 0.20 |
| 06/16/98 | 10.5 | 9.8 | 30.60 | 30.41 | 2.21 | 0.523 | 1.71 | 3.68 | 0.06 |
| 06/23/98 | 11.0 | 9.7 | 29.22 | 30.56 | 4.71 | 0.660 | 2.57 | 4.95 | 0.22 |
| 06/29/98 | 11.5 | 10.4 | 29.52 | 29.97 | 6.00 | 0.655 | 3.79 | 4.29 | 0.26 |
| 07/07/98 | 12.1 | 11.4 | 30.43 | 30.58 | 5.89 | 0.719 | 4.06 | 5.61 | 0.32 |
| 07/14/98 | 11.9 | 10.9 | 29.70 | 30.38 | 3.75 | 0.591 | 3.03 | 3.26 | 0.18 |
| 07/21/98 | 13.0 | 11.6 | 30.23 | 30.87 | 2.21 | 0.544 | 1.46 | 3.63 | 0.17 |
| 07/28/98 | 13.0 | 12.2 | 30.66 | 30.88 | 1.76 | 0.417 | 0.64 | 2.77 | 0.08 |
| 08/04/98 | 13.2 | 11.8 | 28.95 | 31.22 | 1.72 | 0.632 | 0.76 | 4.42 | 0.16 |
| 08/11/98 | 13.6 | 13.3 | 31.01 | 31.03 | 0.99 | 0.760 | 0.91 | 4.80 | 0.09 |
| 08/18/98 | 13.8 | 12.6 | 30.93 | 31.40 | 0.69 | 0.690 | 0.97 | 3.33 | 0.04 |
| 08/25/98 | 14.0 | 13.5 | 30.71 | 30.89 | 1.90 | 0.902 | 1.00 | 3.89 | 0.15 |
| 09/01/98 | 13.3 | 12.2 | 31.24 | 31.72 | 4.09 | 0.799 | 2.39 | 4.10 | 0.25 |
| 09/08/98 | 13.8 | 13.4 | 30.94 | 31.10 | 5.08 | 0.776 | 2.95 | 4.10 | 0.29 |
| 09/15/98 | 13.0 | 12.7 | 29.96 | 31.34 | 6.26 | 1.005 | 4.01 | | 0.32 |
| 09/22/98 | 13.1 | 12.7 | 31.09 | 31.20 | 6.44 | 0.915 | 4.47 | 3.86 | 0.30 |
| 09/29/98 | 12.2 | 11.5 | 30.69 | 31.94 | 7.33 | 1.044 | 5.46 | 4.52 | 0.31 |
| 10/13/98 | 10.5 | 10.3 | 30.93 | 31.92 | 6.08 | 0.809 | 4.80 | 4.65 | 0.30 |
| 10/26/98 | 9.7 | 9.4 | 30.85 | 30.90 | 6.87 | 0.811 | 4.59 | 5.44 | 0.29 |
| 11/10/98 | 8.2 | 8.1 | 31.10 | 31.19 | 9.09 | 1.018 | 6.86 | 6.26 | 0.34 |
| 12/08/98 | 5.7 | 5.9 | 30.10 | 30.19 | 11.27 | 1.053 | 9.41 | 4.11 | 0.31 |

| Date | Depth | Temp. | Salinity | Silicate | Phosphate | Nitrates | Ammonia | Nitrite |
|---|---|---|---|---|---|---|---|---|
| **Station 16** | | | | | | | | |
| 01/20/97 | 0 m | 3.2 | 31.56 | | | | | |
| 01/20/97 | 10 m | 3.9 | 31.56 | | | | | |
| 01/20/97 | 25 m | 4.0 | 31.57 | | | | | |
| 01/20/97 | 50 m | 4.7 | 31.82 | | | | | |
| 02/24/97 | 0 m | 1.9 | 31.46 | | | | | |
| 02/24/97 | 10 m | 2.5 | 31.46 | | | | | |
| 02/24/97 | 25 m | 3.0 | 31.64 | | | | | |
| 02/24/97 | 50 m | 3.8 | 31.93 | | | | | |
| 03/19/97 | 0 m | 2.1 | 31.66 | | | | | |
| 03/19/97 | 10 m | 2.4 | 31.67 | | | | | |
| 03/19/97 | 25 m | 2.5 | 31.75 | | | | | |
| 03/19/97 | 50 m | 3.1 | 31.95 | | | | | |
| 04/22/97 | 0 m | 3.2 | 31.06 | | | | | |
| 04/22/97 | 10 m | 3.5 | 31.16 | | | | | |
| 04/22/97 | 25 m | 3.3 | 31.64 | | | | | |
| 04/22/97 | 50 m | 3.6 | 31.98 | | | | | |
| 05/13/97 | 0 m | 5.0 | 30.98 | | | | | |
| 05/13/97 | 10 m | 4.4 | 31.09 | | | | | |
| 05/13/97 | 25 m | 4.0 | 31.55 | | | | | |
| 05/13/97 | 50 m | 4.0 | 31.70 | | | | | |
| 05/20/97 | 0 m | 7.2 | 28.68 | | | | | |
| 05/20/97 | 10 m | 4.9 | 30.64 | | | | | |
| 05/20/97 | 25 m | 4.3 | 31.22 | | | | | |
| 05/20/97 | 50 m | 4.0 | 31.70 | | | | | |
| 06/03/97 | 0 m | 7.5 | 30.05 | | | | | |
| 06/03/97 | 10 m | 6.6 | 30.37 | | | | | |
| 06/03/97 | 25 m | 5.0 | 31.05 | | | | | |
| 06/03/97 | 50 m | 4.7 | 31.69 | | | | | |
| 06/10/97 | 0 m | 7.8 | 30.25 | | | | | |
| 06/10/97 | 10 m | 6.5 | 30.70 | | | | | |
| 06/10/97 | 25 m | 6.4 | 30.76 | | | | | |
| 06/10/97 | 50 m | 5.6 | 31.34 | | | | | |
| 06/17/97 | 0 m | 8.5 | 30.57 | | | | | |
| 06/17/97 | 10 m | 6.7 | 30.92 | | | | | |
| 06/17/97 | 25 m | 6.0 | 31.47 | | | | | |
| 06/17/97 | 50 m | 5.7 | 32.00 | | | | | |
| 06/23/97 | 0 m | 9.2 | 31.12 | 0.51 | 0.508 | 0.53 | 5.35 | 0.15 |
| 06/23/97 | 10 m | 7.7 | 31.11 | 0.63 | 0.456 | 0.98 | 2.77 | 0.16 |
| 06/23/97 | 25 m | 6.4 | 31.58 | 2.70 | 0.602 | 4.40 | 2.84 | 0.25 |
| 06/23/97 | 50 m | 6.3 | 31.73 | 3.08 | 0.708 | 4.63 | 4.21 | 0.21 |
| 07/09/97 | 0 m | 10.0 | 31.26 | | | | | |
| 07/09/97 | 10 m | 9.0 | 31.32 | | | | | |

| Date | Depth | Temp. | Salinity | Silicate | Phosphate | Nitrates | Ammonia | Nitrite |
|---|---|---|---|---|---|---|---|---|
| **Station 16** | | | | | | | | |
| 07/09/97 | 25 m | 8.2 | 31.37 | | | | | |
| 07/09/97 | 50 m | 7.4 | 31.77 | | | | | |
| 07/14/97 | 0 m | 11.9 | 31.23 | 2.31 | 0.570 | 2.01 | 4.36 | 0.19 |
| 07/14/97 | 10 m | 9.4 | 31.32 | 2.48 | 0.705 | 2.60 | 1.96 | 0.17 |
| 07/14/97 | 25 m | 8.3 | 31.52 | 3.64 | 0.766 | 4.23 | 2.95 | 0.21 |
| 07/14/97 | 50 m | 7.5 | 31.98 | 5.00 | 0.862 | 5.35 | 4.37 | 0.21 |
| 07/21/97 | 0 m | 11.4 | 31.37 | 3.85 | 0.716 | 3.05 | 5.87 | 0.20 |
| 07/21/97 | 10 m | 9.9 | 31.43 | 3.90 | 0.711 | 3.25 | 2.71 | 0.21 |
| 07/21/97 | 25 m | 9.7 | 31.50 | 4.15 | 0.646 | 3.73 | 5.92 | 0.21 |
| 07/21/97 | 50 m | 8.2 | 31.92 | 5.22 | 0.783 | 5.63 | 2.27 | 0.22 |
| 08/05/97 | 0 m | 12.5 | 31.16 | 3.10 | 0.633 | 1.27 | 5.25 | 0.15 |
| 08/05/97 | 10 m | 11.2 | 31.60 | 3.63 | 0.559 | 2.47 | 3.75 | 0.19 |
| 08/05/97 | 25 m | 10.7 | 31.67 | 4.20 | 0.577 | 3.03 | 3.07 | 0.19 |
| 08/05/97 | 50 m | 9.2 | 32.12 | 6.10 | 0.780 | 5.76 | 2.16 | 0.19 |
| 08/10/97 | 0 m | 13.0 | 31.81 | 4.55 | 0.507 | 2.31 | 4.52 | 0.21 |
| 08/10/97 | 10 m | 11.5 | 31.67 | 5.26 | 0.555 | 2.72 | 1.99 | 0.20 |
| 08/10/97 | 25 m | 10.3 | 31.87 | 5.54 | 0.711 | 4.68 | 2.22 | 0.25 |
| 08/10/97 | 50 m | 9.1 | 32.27 | 7.63 | 0.812 | 6.81 | 2.61 | 0.20 |
| 08/19/97 | 0 m | 13.1 | 31.64 | 3.91 | 0.545 | 1.09 | 2.64 | 0.16 |
| 08/19/97 | 10 m | 11.7 | 31.74 | 4.93 | 0.656 | 2.95 | 2.27 | 0.21 |
| 08/19/97 | 25 m | 10.7 | 32.07 | 6.51 | 0.731 | 4.55 | | 0.20 |
| 08/19/97 | 50 m | 9.4 | 32.46 | 7.41 | 0.892 | 7.49 | 2.08 | 0.18 |
| 08/26/97 | 0 m | 13.0 | 32.00 | 6.89 | 0.590 | 3.16 | 6.44 | 0.21 |
| 08/26/97 | 10 m | 11.7 | 32.04 | 6.85 | 0.738 | 4.01 | 2.17 | 0.23 |
| 08/26/97 | 25 m | 10.8 | 32.13 | 6.76 | 0.796 | 5.77 | 2.72 | 0.26 |
| 08/26/97 | 50 m | 10.0 | 32.36 | 9.09 | 0.906 | 7.10 | 2.23 | 0.28 |
| 09/03/97 | 0 m | 13.3 | | 1.88 | 0.507 | 0.62 | 7.63 | 0.13 |
| 09/03/97 | 10 m | | | 3.83 | 0.569 | 2.37 | | 0.21 |
| 09/03/97 | 25 m | | | 4.61 | 0.635 | 3.24 | | 0.30 |
| 09/03/97 | 50 m | | | 7.17 | 0.827 | 6.70 | 5.67 | 0.32 |
| 09/15/97 | 0 m | 13.5 | 31.81 | 4.09 | 0.698 | 3.15 | 3.60 | 0.39 |
| 09/15/97 | 10 m | 12.6 | 31.92 | 4.11 | 0.655 | 3.36 | 4.47 | 0.41 |
| 09/15/97 | 25 m | 12.0 | 32.14 | 3.97 | 0.632 | 3.58 | 2.43 | 0.32 |
| 09/15/97 | 50 m | 10.4 | 32.60 | 7.07 | 0.853 | 7.49 | 4.98 | 0.25 |
| 10/01/97 | 0 m | 11.8 | 32.34 | 5.62 | 0.821 | 5.31 | 3.63 | 0.49 |
| 10/01/97 | 10 m | 11.6 | 32.35 | 5.54 | 0.729 | 5.32 | 4.77 | 0.43 |
| 10/01/97 | 25 m | 11.2 | 32.43 | 6.20 | 0.780 | 6.36 | 3.30 | 0.35 |
| 10/01/97 | 50 m | 10.9 | 32.54 | 7.51 | 0.887 | 7.70 | 4.62 | 0.27 |
| 10/14/97 | 0 m | 11.1 | | 5.97 | 0.785 | 5.71 | 3.62 | 0.27 |
| 10/14/97 | 10 m | | | 5.78 | 0.732 | 5.62 | 4.47 | 0.23 |
| 10/14/97 | 25 m | | | 10.54 | 0.810 | 7.19 | 1.86 | 0.24 |
| 10/14/97 | 50 m | | | 7.73 | 0.814 | 8.36 | | 0.20 |

| Date | Depth | Temp. | Salinity | Silicate | Phosphate | Nitrates | Ammonia | Nitrite |
|---|---|---|---|---|---|---|---|---|
| **Station 16** | | | | | | | | |
| 11/12/97 | 0 m | 9.8 | 32.46 | 6.40 | 0.914 | 7.24 | 3.39 | 0.31 |
| 11/12/97 | 10 m | 9.8 | 32.46 | 6.39 | 0.823 | 7.29 | 3.85 | 0.30 |
| 11/12/97 | 25 m | 10.0 | 32.55 | 7.25 | 0.864 | 7.84 | 4.61 | 0.32 |
| 11/12/97 | 50 m | 10.0 | 32.58 | 6.82 | 0.859 | 7.88 | | 0.31 |
| 12/09/97 | 0 m | 6.8 | 31.56 | 7.39 | 0.934 | 8.00 | 1.97 | 0.19 |
| 12/09/97 | 10 m | 6.9 | 32.36 | 6.98 | 0.863 | 7.56 | 3.39 | 0.19 |
| 12/09/97 | 25 m | 6.9 | 32.36 | 7.20 | 0.890 | 7.83 | 4.19 | 0.19 |
| 12/09/97 | 50 m | 6.9 | 32.36 | 7.31 | 0.920 | 8.00 | 2.33 | 0.19 |
| 02/10/98 | 0 m | 2.8 | 31.56 | 7.62 | 0.829 | 7.30 | | 0.15 |
| 02/10/98 | 10 m | 2.7 | 31.63 | 7.66 | 0.847 | 7.31 | 2.14 | 0.13 |
| 02/10/98 | 25 m | 2.8 | 31.65 | 7.59 | 0.844 | 7.45 | 1.87 | 0.14 |
| 02/10/98 | 50 m | 2.9 | 31.67 | 7.53 | 0.832 | 7.32 | 1.77 | 0.13 |
| 03/26/98 | 0 m | 2.5 | 29.77 | 10.39 | 0.786 | 7.51 | 2.69 | 0.16 |
| 03/26/98 | 10 m | 2.7 | 30.90 | 8.50 | 0.818 | 7.39 | 1.77 | 0.15 |
| 03/26/98 | 25 m | 2.9 | 31.22 | 6.39 | 0.700 | 5.93 | 5.40 | 0.14 |
| 03/26/98 | 50 m | 3.1 | 31.41 | 6.24 | 0.791 | 5.68 | 3.38 | 0.13 |
| 04/21/98 | 0 m | 4.8 | 29.82 | 10.75 | 0.824 | 8.16 | 5.14 | 0.19 |
| 04/21/98 | 10 m | 4.3 | 30.78 | 8.70 | 0.800 | 7.65 | 1.68 | 0.19 |
| 04/21/98 | 25 m | 4.1 | 31.24 | 7.05 | 0.769 | 6.45 | 2.46 | 0.17 |
| 04/21/98 | 50 m | 4.0 | 31.46 | 6.34 | 0.769 | 5.96 | 4.64 | 0.16 |
| 05/12/98 | 0 m | 6.8 | | 8.34 | 0.716 | 6.44 | 5.36 | 0.24 |
| 05/12/98 | 10 m | | | 8.08 | 0.633 | 6.21 | 2.70 | 0.22 |
| 05/12/98 | 25 m | | | 9.01 | 0.739 | 7.46 | 2.53 | 0.22 |
| 05/12/98 | 50 m | | | 6.86 | 0.863 | 8.08 | 3.64 | 0.24 |
| 05/19/98 | 0 m | 8.5 | 29.39 | 1.51 | 0.388 | 0.10 | 5.65 | 0.14 |
| 05/19/98 | 10 m | 6.6 | 30.31 | 3.43 | 0.573 | 3.43 | 2.59 | 0.20 |
| 05/19/98 | 25 m | 5.6 | 30.98 | 5.98 | 0.772 | 6.83 | 6.48 | 0.25 |
| 05/19/98 | 50 m | 5.1 | 31.51 | 6.45 | 0.882 | 7.72 | 4.95 | 0.30 |
| 05/26/98 | 0 m | 7.1 | 30.97 | 2.12 | 0.580 | 2.86 | 5.56 | 0.18 |
| 05/26/98 | 10 m | 6.3 | 31.03 | 2.81 | 0.605 | 4.13 | 1.93 | 0.19 |
| 05/26/98 | 25 m | 5.6 | 31.27 | 4.39 | 0.730 | 5.96 | 2.66 | 0.20 |
| 05/26/98 | 50 m | 5.2 | 31.61 | 5.38 | 0.772 | 6.97 | 2.80 | 0.23 |
| 06/02/98 | 0 m | 8.2 | 31.27 | 0.45 | 0.375 | 0.19 | 6.01 | 0.08 |
| 06/02/98 | 10 m | 6.7 | 31.17 | 0.73 | 0.460 | 0.76 | 3.90 | 0.12 |
| 06/02/98 | 25 m | 6.0 | 31.34 | 2.89 | 0.712 | 5.10 | 1.71 | 0.20 |
| 06/02/98 | 50 m | 5.4 | 31.59 | 4.44 | 0.804 | 6.40 | 2.79 | 0.22 |
| 06/09/98 | 0 m | 8.3 | 31.13 | 1.89 | 0.609 | 3.17 | 4.58 | 0.19 |
| 06/09/98 | 10 m | 7.3 | 31.19 | 1.64 | 0.566 | 2.71 | 2.69 | 0.20 |
| 06/09/98 | 25 m | 6.6 | 31.27 | 2.15 | 0.630 | 3.66 | 2.18 | 0.20 |
| 06/09/98 | 50 m | 5.8 | 31.53 | 3.31 | 0.737 | 5.67 | 2.41 | 0.24 |
| 06/16/98 | 0 m | 8.9 | 30.89 | 1.31 | 0.457 | 1.96 | 4.92 | 0.08 |
| 06/16/98 | 10 m | 8.3 | 30.91 | 2.08 | 0.528 | 2.87 | 1.84 | 0.08 |

| Date | Depth | Temp. | Salinity | Silicate | Phosphate | Nitrates | Ammonia | Nitrite |
|---|---|---|---|---|---|---|---|---|
| **Station 16** | | | | | | | | |
| 06/16/98 | 25 m | 8.0 | 31.03 | 2.11 | 0.524 | 3.08 | 1.96 | 0.08 |
| 06/16/98 | 50 m | 6.7 | 31.50 | 3.03 | 0.574 | 4.13 | 4.15 | 0.15 |
| 06/23/98 | 0 m | 9.9 | 30.92 | 2.54 | 0.640 | 2.77 | 4.03 | 0.18 |
| 06/23/98 | 10 m | 8.6 | 31.04 | 2.52 | 0.538 | 3.08 | 2.95 | 0.18 |
| 06/23/98 | 25 m | 7.2 | 31.43 | 3.65 | 0.618 | 4.74 | 3.76 | 0.26 |
| 06/23/98 | 50 m | 6.5 | 31.70 | 4.27 | 0.707 | 5.72 | 2.68 | 0.25 |
| 06/29/98 | 0 m | 9.7 | 31.21 | 3.14 | 0.624 | 4.05 | 3.92 | 0.22 |
| 06/29/98 | 10 m | 8.7 | 31.25 | 3.16 | 0.654 | 4.27 | 2.67 | 0.26 |
| 06/29/98 | 25 m | 8.0 | 31.32 | 3.16 | 0.613 | 4.37 | 2.86 | 0.23 |
| 06/29/98 | 50 m | 7.1 | 31.60 | 4.19 | 0.694 | 5.36 | 2.86 | 0.27 |
| 07/07/98 | 0 m | 11.5 | 31.28 | 2.34 | 0.474 | 2.13 | 2.94 | 0.10 |
| 07/07/98 | 10 m | 9.5 | 31.32 | 3.91 | 0.687 | 4.95 | 3.06 | 0.25 |
| 07/07/98 | 25 m | 9.0 | 31.43 | 3.83 | 0.691 | 5.15 | 2.60 | 0.20 |
| 07/07/98 | 50 m | 8.1 | 31.67 | 4.61 | 0.727 | 6.06 | 4.54 | 0.22 |
| 07/14/98 | 0 m | 10.7 | 31.12 | 2.85 | 0.562 | 3.49 | 2.88 | 0.16 |
| 07/14/98 | 10 m | 8.1 | 31.46 | 2.59 | 0.501 | 3.38 | 2.02 | 0.15 |
| 07/14/98 | 25 m | 7.4 | 31.64 | 3.30 | 0.564 | 4.04 | 1.85 | 0.17 |
| 07/14/98 | 50 m | 7.0 | 31.88 | 4.76 | 0.692 | 5.64 | 1.74 | 0.20 |
| 07/21/98 | 0 m | 10.4 | 31.47 | 3.66 | 0.611 | 4.20 | 2.87 | 0.24 |
| 07/21/98 | 10 m | 9.8 | 31.53 | 3.62 | 0.589 | 4.20 | 2.26 | 0.24 |
| 07/21/98 | 25 m | 9.2 | 31.65 | 4.06 | 0.597 | 5.20 | 2.47 | 0.27 |
| 07/21/98 | 50 m | 7.8 | 31.99 | 4.77 | 0.629 | 6.43 | 4.37 | 0.24 |
| 08/04/98 | 0 m | 13.5 | 31.77 | 0.74 | 0.379 | 0.06 | 2.69 | 0.10 |
| 08/04/98 | 10 m | 10.8 | 31.62 | 1.61 | 0.441 | 0.40 | 2.47 | 0.13 |
| 08/04/98 | 25 m | 10.1 | 31.66 | 3.40 | 0.657 | 4.04 | 2.57 | 0.32 |
| 08/04/98 | 50 m | 8.6 | 31.98 | 5.00 | 0.809 | 6.35 | 3.39 | 0.33 |
| 08/11/98 | 0 m | 12.0 | 31.64 | 0.80 | 0.442 | 0.30 | 4.06 | 0.07 |
| 08/11/98 | 10 m | 11.2 | 31.61 | 2.29 | 0.536 | 2.45 | 2.19 | 0.16 |
| 08/11/98 | 25 m | 10.7 | 31.73 | 2.50 | 0.550 | 2.83 | 2.34 | 0.22 |
| 08/11/98 | 50 m | 9.6 | 31.89 | 3.90 | 0.779 | 4.38 | 3.00 | 0.22 |
| 08/18/98 | 0 m | 12.9 | | 0.73 | 0.348 | 0.08 | 5.12 | 0.04 |
| 08/18/98 | 10 m | | | 0.88 | 0.344 | 0.03 | 2.34 | 0.03 |
| 08/18/98 | 25 m | 10.3 | 31.85 | 3.88 | 0.667 | 4.33 | 2.26 | 0.25 |
| 08/18/98 | 50 m | 8.7 | 32.27 | 6.59 | 0.782 | 7.88 | 2.12 | 0.23 |
| 08/25/98 | 0 m | 12.2 | 31.71 | 1.99 | 0.521 | 0.66 | 2.65 | 0.13 |
| 08/25/98 | 10 m | 11.2 | 31.77 | 2.11 | 0.498 | 1.11 | 1.68 | 0.14 |
| 08/25/98 | 25 m | 10.5 | 31.93 | 3.44 | 0.656 | 3.46 | 2.28 | 0.21 |
| 08/25/98 | 50 m | 9.9 | 32.07 | 5.37 | 0.797 | 5.90 | 2.00 | 0.24 |
| 09/01/98 | 0 m | 13.8 | 31.87 | 3.22 | 0.536 | 2.37 | 2.79 | 0.25 |
| 09/01/98 | 10 m | 12.1 | 31.85 | 3.17 | 0.543 | 2.79 | 4.80 | 0.27 |
| 09/01/98 | 25 m | 11.7 | 31.89 | 3.16 | 0.593 | 3.35 | 2.27 | 0.27 |
| 09/01/98 | 50 m | 9.9 | 32.21 | 4.74 | 0.695 | 5.29 | 3.69 | 0.24 |

| Date | Depth | Temp. | Salinity | Silicate | Phosphate | Nitrates | Ammonia | Nitrite |
|---|---|---|---|---|---|---|---|---|
| **Station 16** | | | | | | | | |
| 09/08/98 | 0 m | 12.8 | 31.79 | 3.37 | 0.650 | 2.92 | 2.86 | 0.27 |
| 09/08/98 | 10 m | 11.5 | 31.94 | 4.74 | 0.803 | 4.31 | 3.04 | 0.31 |
| 09/08/98 | 25 m | 10.6 | 32.12 | 5.50 | 0.850 | 6.12 | 3.15 | 0.28 |
| 09/08/98 | 50 m | | | 6.98 | 0.944 | 7.70 | 2.61 | 0.25 |
| 09/15/98 | 0 m | 12.3 | 31.96 | 5.83 | 0.755 | 5.43 | 3.08 | 0.31 |
| 09/15/98 | 10 m | 11.4 | 32.03 | 6.01 | 0.814 | 5.88 | 2.63 | 0.31 |
| 09/15/98 | 25 m | 10.8 | 32.12 | 6.45 | 0.879 | 6.76 | 3.00 | 0.32 |
| 09/15/98 | 50 m | 9.5 | 32.43 | 7.86 | 1.009 | 9.24 | 3.00 | 0.26 |
| 09/22/98 | 0 m | 12.0 | 32.10 | 6.22 | 0.774 | 4.93 | 3.00 | 0.24 |
| 09/22/98 | 10 m | 11.5 | 32.05 | 6.46 | 0.763 | 5.60 | 2.34 | 0.26 |
| 09/22/98 | 25 m | 10.5 | 32.21 | 7.53 | 0.847 | 7.79 | 2.46 | 0.25 |
| 09/22/98 | 50 m | 9.6 | 32.43 | 8.28 | 0.933 | 8.78 | 2.12 | 0.20 |
| 09/29/98 | 0 m | 11.8 | 32.08 | 7.00 | 0.902 | 6.47 | 3.49 | 0.25 |
| 09/29/98 | 10 m | 11.1 | 32.12 | 7.00 | 0.902 | 6.47 | 3.49 | 0.25 |
| 09/29/98 | 25 m | 10.5 | 32.25 | 7.39 | 0.877 | 7.45 | 3.38 | 0.24 |
| 09/29/98 | 50 m | 10.1 | 32.37 | 8.12 | 0.885 | 8.28 | 4.83 | 0.21 |
| 10/13/98 | 0 m | 10.1 | 32.20 | 6.94 | 0.766 | 7.33 | 2.33 | 0.28 |
| 10/13/98 | 10 m | 10.1 | 32.20 | 7.08 | 0.773 | 7.37 | 2.15 | 0.29 |
| 10/13/98 | 25 m | 10.1 | 32.21 | 7.08 | 0.828 | 7.27 | 1.80 | 0.28 |
| 10/13/98 | 50 m | 9.8 | 32.35 | 8.05 | 0.819 | 8.11 | 1.96 | 0.27 |
| 10/26/98 | 0 m | 9.7 | 32.31 | 6.98 | 0.859 | 7.50 | 2.59 | 0.25 |
| 10/26/98 | 10 m | 9.4 | 32.40 | 7.15 | 0.801 | 7.76 | 4.05 | 0.23 |
| 10/26/98 | 25 m | 9.3 | 32.48 | 7.24 | 0.802 | 7.96 | 4.25 | 0.35 |
| 10/26/98 | 50 m | 9.2 | 32.57 | 8.83 | 1.000 | 9.63 | 2.04 | 0.26 |
| 11/10/98 | 0 m | 8.8 | 31.99 | 7.61 | 0.991 | 8.63 | 3.46 | 0.26 |
| 11/10/98 | 10 m | 8.8 | 32.46 | 7.52 | 0.959 | 8.48 | 1.92 | 0.24 |
| 11/10/98 | 25 m | 8.8 | 32.45 | 7.26 | 0.828 | 8.47 | 1.18 | 0.23 |
| 11/10/98 | 50 m | 8.8 | 32.46 | 7.50 | 0.874 | 8.74 | 2.20 | 0.24 |
| 12/08/98 | 0 m | 7.0 | 32.32 | 8.05 | 1.030 | 9.37 | 4.19 | 0.30 |
| 12/08/98 | 10 m | 7.1 | 32.32 | 8.58 | 1.012 | 9.65 | 2.60 | 0.22 |
| 12/08/98 | 25 m | 7.1 | 32.32 | 7.40 | 0.955 | 8.77 | 4.05 | 0.21 |
| 12/08/98 | 50 m | 7.2 | 32.35 | 8.51 | 1.095 | 9.87 | 2.90 | 0.21 |